

RECLAMATION

Managing Water in the West

Draft Environmental Assessment

Santa Clara Conduit Shutdown, Inspection, and Repair Santa Clara Valley Water District

EA-08-78



U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South Central California Area Office
Fresno, California

December 2008

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List of Acronyms, Abbreviations, and Definition of Terms

ACOE	Army Corps of Engineers
APE	area of potential effect
BAAQMD	San Francisco Bay Area Air Quality Management District

BMP	Best Management Practice
CDFG	California Department of Fish and Game
CFI/CFO	Calaveras Fault Inlet/Calaveras Fault Outlet
CO	carbon monoxide
CVP	Central Valley Project
CWA	Clean Water Act
EA	environmental assessment
ESA	Endangered Species Act
ESU	evolutionarily significant unit
FWCA	Fish and Wildlife Coordination Act
ITAs	Indian Trust Assets
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
O ₃	ozone
OPAU	District Operations Planning and Analysis Unit
Pb	lead
PM _{2.5}	particulate matter under 2.5 microns in diameter
PM ₁₀	particulate matter under 10 microns in diameter
PMP	Pipeline Maintenance Program
Reclamation	Bureau of Reclamation
RWQCB	Regional Water Quality Control Board
SCVWD	Santa Clara Valley Water District
Service	U.S. Fish and Wildlife Service
SO ₂	sulfur dioxide
SV1	Sectionalizing Valve 1

Section 1 Purpose and Need for Action

1.1 Background

The San Felipe Division of the Central Valley Project, in the central coastal area of California, encompasses the Santa Clara Valley in Santa Clara County, the northern portion of San Benito County, the southern portion of Santa Cruz County, and the northern edge of Monterey County. Authorized in 1960, the division provides supplemental water to 63,500 acres of land, in addition to 132,400 acre-feet of water annually for municipal and industrial use. Water is conveyed from the Delta of the San Joaquin and Sacramento Rivers through the Delta-Mendota Canal to O'Neill Forebay. The water is then pumped into San Luis Reservoir and diverted through the 1.8 miles of Pacheco Tunnel Reach 1 to the Pacheco Pumping Plant. At the pumping plant, the water is lifted to the 5.3-mile-long high-level section of Pacheco Tunnel Reach 2. The water flows through the tunnel and, without additional pumping, through the Pacheco Conduit to the bifurcation of the Santa Clara and Hollister Conduits. The water is then conveyed throughout the service areas for irrigation and municipal uses (Reclamation 2007).

The San Felipe Division Water Delivery System was designed and built by the Bureau of Reclamation (Reclamation) to deliver water from San Luis Reservoir to portions of San Benito County and the Santa Clara Valley via the Coyote Pump Plant. The system is maintained by the Santa Clara Valley Water District (SCVWD). Facilities in the San Felipe Division System included in the Proposed Action are the Santa Clara Conduit (Figure 1-1) and the Santa Clara Tunnel.

SCVWD prepared the *Santa Clara Valley Water District Pipeline Maintenance Program Environmental Impact Report* (#2005101047, notice of determination dated 11/13/2007) that details the activities for their conveyance system. Reclamation prepared a draft environmental assessment (EA) and biological assessment for the *Pipeline Maintenance Program for the Pacheco and Santa Clara Conduits and Tunnels, Santa Clara Valley Water District, Draft EA-06-110* that details the actions for the Pacheco and Santa Clara Conduit pipeline maintenance. Public comment period closed November 9, 2007. Finalization of the EA is pending the biological opinion from U.S. Fish and Wildlife Service (Service).

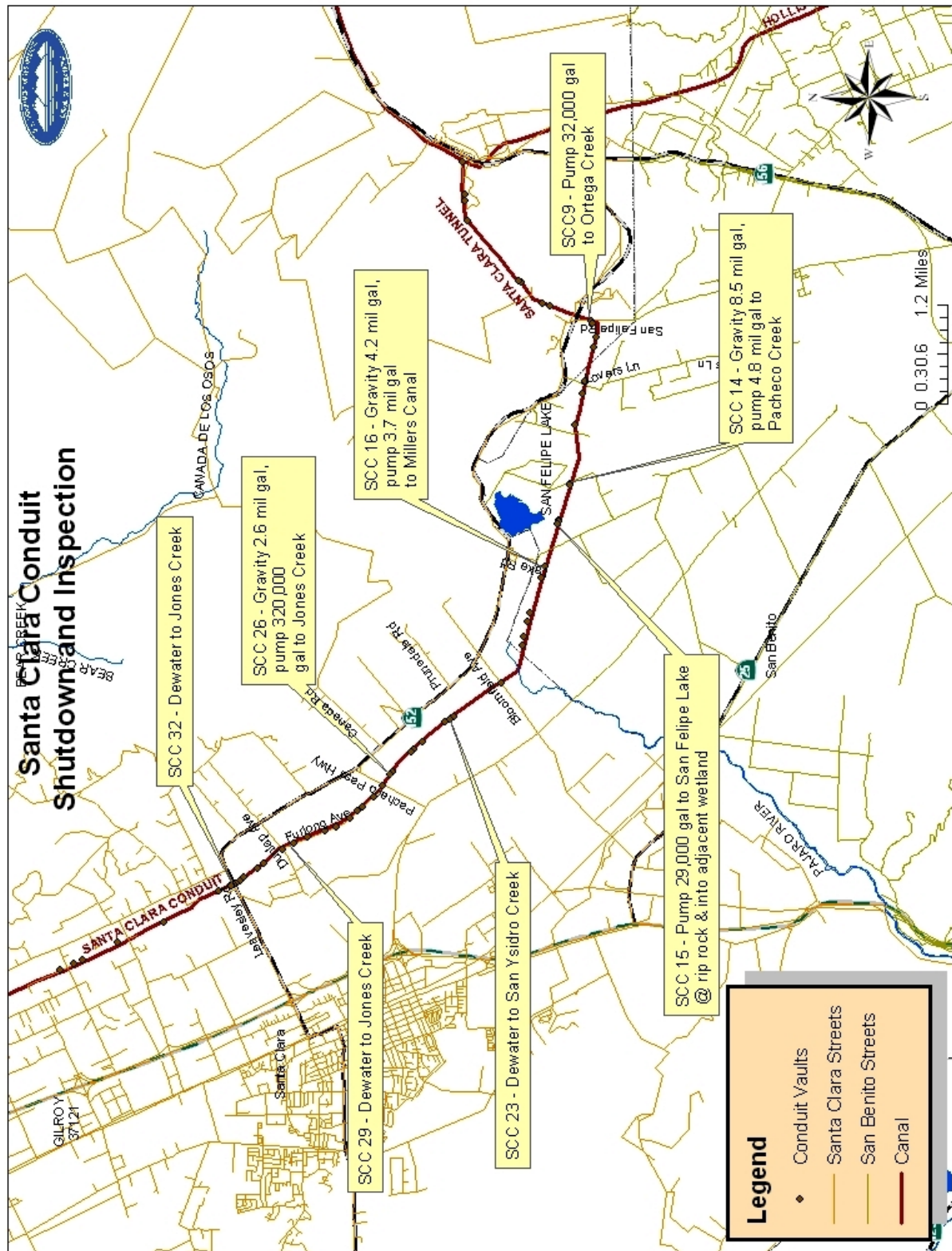


Figure 1-1 Location Map

1.2 Purpose and Need

The purpose of the Proposed Action is to implement routine and preventative maintenance on the water conveyance system. This maintenance is needed to meet the SCVWD's obligations of reliable water service and delivery.

The following are the objectives of the Proposed Action:

- Complete an analysis of the stability and condition of the pipelines.
- Determine if other, more significant repairs or pipeline replacements are needed.
- Install and/or replace seals, replace blow-off valves, and replace air release valves as identified through inspection.
- Perform minor internal pipeline repairs as needed.

1.3 Scope

Santa Clara Valley Water District has prepared the *Pipeline Maintenance Program Environmental Impact Report/Environmental Assessment* which covers the maintenance of all facilities that supply water to and within the District. This EA is limited to the environmental analysis of maintenance actions related to the Santa Clara Conduit for 2009 only.

1.4 Potential Issues

- Air Quality
- Groundwater Resources
- Surface Water Resources
- Land Use
- Biological Resources
- Cultural Resources
- Geology
- Socioeconomic Resources
- Environmental Justice

Comprehensive evaluation of Indian Trust Assets (ITAs) was eliminated from detailed environmental analysis as there are none in the action area.

Section 2 Alternatives Including Proposed Action

2.1 Alternative A – No Action

Reclamation would not approve of the draining, inspection, repair and refilling of the Santa Clara Conduit. The No Action Alternative would result in the delay in the draining, inspecting, and repair of the Santa Clara Conduit. If delayed until the Pipeline Maintenance Program (PMP) is approved, there is a potential that the Santa Clara Conduit could degrade and the system would be compromised.

2.2 Alternative B - Proposed Action

SCVWD, on behalf of Reclamation, proposes to drain, inspect, repair, and refill the Santa Clara Conduit, a Reclamation-owned facility in February 2009.

The Proposed Action may require several permits including:

- Army Corps of Engineers (ACOE) Section 404 permit for placement of dredge and fill into waters of the United States
- Regional Water Quality Control Board (RWQCB) Section 401 Certification
- RWQCB National Pollutant Discharge Elimination System (NPDES) permits for low threat water quality discharges
- California Department of Fish and Game (CDFG) Section 1600 of Fish and Game Code Streambed Alteration Memorandum of Agreement
- Encroachment permits, as necessary

The Proposed Action includes the following:

- Minor road preparation (Dura-Base™ Composite Mat system) to access drainage and pump-out locations.
- Temporary gate installations at access points to the Santa Clara Conduit.
- Closing valves upstream and downstream of the work area (isolation).
- Draining the remaining water in the Santa Clara Conduit from the Santa Clara Tunnel to Sectionalizing Valve 1 (SV1).
- Inspecting the pipelines and performing minor repairs.

The initial draining of the Santa Clara Conduit is anticipated to start February 2009. The duration of the project is approximately six weeks. Draining the pipeline would take approximately two weeks followed by four weeks of inspection and repairs as they are identified. The work is anticipated to be completed by April 2009.

The Santa Clara Conduit would be drained from the Santa Clara Tunnel to SV1, which is a distance of about 12.71 miles. The sequence of draining and pumping events is identified in the table below. The total amount of water to be removed from the pipe is approximately 78 acre-feet or about 25,000,000 gallons. The vast majority of the water would be discharged to surface streams in the area of Calaveras Fault Inlet/Calaveras Fault Outlet (CFI/CFO). Deliveries to San

Benito County Water District can be continued during this shutdown; however, flows to the SCVWD would cease. One irrigator at San Felipe Road would be impacted for the duration of the shutdown.

During the shutdown, the portion of 96-inch pipe generally located between the Santa Clara Tunnel outlet and the San Felipe Road not inspected during the 2003 shutdown would be inspected. This portion of pipe is approximately 6,663 feet in length. Approximately 8.21 miles of pipeline between CFO and SV1 would also be inspected.

Discharges to creeks would not occur between the months of February through April if steelhead trout are known to inhabit those creeks.

Shutdown of the Santa Clara Conduit would not be accomplished during periods of high water demand (June through August, and as late as September). The maintenance availability for this shutdown would be the month of February through April.

Shutdown would be coordinated with District Operations to ensure availability of alternate water sources during the shutdown.

PIPELINE ISOLATION AND PREPERATION

The Santa Clara Conduit would be isolated at the Bifurcation Vault, SV1, and SV2. Minor road preparation would be conducted to gain access to some of the drainage and pump-out sites. This would also include the installation of temporary gates at some of the entry points to prevent trespassing.

INSPECTIONS AND REPAIRS

Pipeline inspection and repairs would be conducted according to SCVWD and Reclamation standards. Pipe inspection and repair would be completed according to SCVWD plans.

Repairs would include installation of rubber-type Weko-seals where appropriate. A Weko seal is a circular rubber ring that is the same diameter as the internal dimension of the conduit that is held in place by an expandable metal ring and forced against the interior diameter of the pipe. The in-pipe repair may also involve welding of pipe joints as needed and minor application of grout to cracks and joints. Welding is performed manually and the procedure includes welding with a hand-held welder during in-pipe repair. Welding is performed within the pipeline if the inside can be accessed. Grout is applied manually during in-pipe repair according to manufacturer and American Water Works Association specifications.

The pipeline would be accessed internally for inspection and repair. No excavation or surface disturbance would be required.

REFILLING

SCVWD personnel would bolt up access points prior to refilling the Santa Clara Conduit. Refilling the Santa Clara Conduit after inspection and repair would be in accordance with standard SCVWD re-filling procedures.

ROAD PREPARATION

If roads to access drainage and pump-out locations become unstable due to weather conditions, access roads would be stabilized utilizing the Dura-BaseTM Composite Mat system. These mats form uninterrupted, consistent surfaces that are secured with locking pins, and would be removed after project completion.

EQUIPMENT

Equipment to be utilized for this project include fans for ventilation, submersible pumps, generators, welding equipment, a flat bed truck, and other SCVWD vehicles. A crane mounted on the back of standard size maintenance trucks may be used to remove lids or to place pumps. Vehicles and equipment would be staged at the Coyote Pumping Plant located near Anderson Reservoir and in the area of the CFI Vault. SCVWD would deliver equipment and materials to the project site as needed.

WORKFORCE

This project would include approximately 20 employees of the SCVWD and 10-15 contract employees. The contractor would be providing general support to SCVWD utility maintenance personnel.

The following measures are part of the proposed action, but only relate to the protection of resources other than federally listed species and their critical habitats. These measures are incorporated from SCVWD's Draft Environmental Impact Report (SCVWD 2007) and the original numbering is preserved.

BMP Hazards-1: Smoking shall be prohibited except in designated staging areas and at least 20 feet from any combustible chemicals, dry grass, or vegetation. Smoking shall be prohibited in pipeline or near the repair surface. [Source: PMP]

BMP Hazards-2: All heavy equipment and rubber-tired construction vehicles used for off-road access in rural environments shall be equipped with fire extinguishers. All rubber-tired construction vehicles used for off-road access in rural environments shall be equipped with appropriate fire fighting equipment, such as shovels and axes or pulaskis, to aid in the prevention or spread of fires. All construction equipment shall be equipped with the appropriate spark arrestors and functioning mufflers. [Source: PMP]

BMP Hazards-3: An extinguisher shall be available at the project site at all times when welding or other repair activities that can generate sparks (such as metal grinding) is occurring. [Source: PMP]

BMP Hazards-4: Measures shall be implemented to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means.

- Prior to entering the work site, all field personnel shall know how to respond when toxic materials are discovered.
- The discharge of any hazardous or non hazardous waste as defined in Division 2, Subdivision 1, Chapter 2 of the California Code of Regulations shall be conducted in accordance with applicable State and federal regulations.

[Source: Best Management Practices Handbook HM-12 Hazardous Materials Management]

BMP Hazards-5: Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations).

- Prior to entering the work site, all field personnel shall know the location of spill kits on crew trucks and at other locations within District facilities.
- All field personnel shall be advised of these locations and trained in their appropriate use.

[Source: Best Management Practices Handbook HM-14 Spill Kit Location]

BMP Hazards-6: All equipment would be properly maintained and inspected for leaks daily before start of work.

No fueling shall be done in a stream channel or immediate flood plain, unless equipment stationed in these locations is not readily relocated (i.e., pumps, generators).

- For stationary equipment that must be fueled on-site, containment shall be provided in such a manner that any accidental spill of fuel shall not be able to enter the water or contaminate sediments that may come in contact with water.
- Any equipment that is readily moved out of the channel shall not be fueled in the channel or immediate flood plain.
- All fueling done at the job site shall provide containment to the degree that any spill shall be unable to enter any channel or damage stream vegetation.

[Source: BMP Handbook HM-10 Vehicle and Equipment Fueling]

BMP Hazards-7: The District shall prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels. District vehicles shall be washed only at the approved area in the corporation yard.

- Field personnel shall be appropriately trained in spill prevention, hazardous material control, and clean up of accidental spills.
- No fueling, repair, cleaning, maintenance, or vehicle washing shall be performed in a creek channel or in areas at the top of a channel bank that may flow into a creek channel

[Source: Best Management Practices Handbook: HM-13 Spill Prevention]

BMP Hazards-8: No washing of vehicles shall occur at job sites. [Source: Best Management Practices Handbook HM-9 Vehicle and Equipment Cleaning]

BMP Hazards-9: Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, shall be prevented from contaminating the soil and/or entering the waters of the state. Any of these materials, placed within or where they may enter a stream or lake shall be removed immediately. [Source: CFI/CFO 1600 Permit Provision 24]

BMP Hazards-10: All equipment shall be stored in a secure area away from the channel. Quantities greater than 55 gallons would be provided with a secondary containment capable of containing 110 percent of the primary container. During the period between October 15 and April 15 (and depending on rain patterns, could include before and after these dates as well), all equipment fluid storage areas would be provided with an impermeable cover to prevent contact with storm water. [Source: PMP]

BMP Hazards-11: Drivers transporting sodium bisulfite, sodium hypochlorite or any other hazardous material shall have a commercial driver's license with a HAZMAT endorsement. [Source: PMP]

BMP Hazards-12: To ensure worker safety is protected during bank protection projects in areas with potentially elevated contaminant concentrations, personal protective equipment would be required during project construction to maintain exposure below levels established by the Occupational Safety and Health Administration (OSHA). [Source: Best Management Practices Handbook HM-15: Avoid Exposing Soils with High Mercury Levels]

BMP Hazards-13: If road construction and maintenance, or construction and grading operations are to occur in areas where naturally-occurring asbestos is likely to be found (such as in serpentine soils), appropriate dust control measures and notification requirements outlined by the Bay Area Air Quality Management District under BMP Air Quality-2 would be implemented. Regardless of the size of the disturbance, activities must not result in emissions that are visible crossing the property line. Road construction and maintenance activities in remote locations are exempt from this requirement. [Source: PMP]

BMP Hazards-14: The District shall provide one portable toilet and one wash station per 20 workers or fraction thereof for any project sites that do not have mobile access to a nearby facility.

Wash stations shall also be required on-site for any job where hazardous materials are handled (such as in repair work) or where pipeline draining involves using dechlorination chemical. [Source: PMP]

Mitigation Measure Hazards-3: If excavation work is to be conducted (1) in an area of known or suspected significant use or storage of hazardous materials (including gas stations, industrial plants, manufacturing facilities, etc.), or (2) in an area of known or suspected release of contaminants, the District shall contact the local agency overseeing hazardous materials releases as well as in-house personnel overseeing groundwater contamination sites to verify whether a release has occurred in the area and whether such a release is expected to affect conditions at the excavation site. If a release has occurred which is expected to affect excavation site conditions, a Health and Safety Plan shall be prepared prior to commencing with any excavation activities which addresses appropriate measures to be implemented, including personal protection and monitoring equipment, appropriate containment measures to implement if contaminated soil or shallow groundwater is encountered, and decontamination procedures. All workers shall be notified of the potential hazards and educated about the elements of the Health and Safety Plan prior to starting work. [Source: PMP]

BMP Hydrology-2: Methods used to prevent mud from being tracked out of work sites onto roadways include installing on unsurfaced access roads a layer of geotextile mat followed by a 4-inch thick layer of 1-3 inch diameter gravel. [Source: SMP Provision No. 4.3]

BMP Hydrology-21: RWQCB objectives for temperature in receiving waters (measured 100 feet downstream of project site in streams and 50 feet downstream in lakes) shall not be exceeded. Receiving water and discharge water would be monitored by a trained individual for temperature prior to the discharge and periodically throughout the drainage operation. [BMP Source: PMP]

BMP Hydrology-24: Receiving water would be monitored for dissolved oxygen and pH before, during, and after discharge of treated water to ensure that Region 2 Basin Plan standards (6.5 – 8.5 for pH, and greater than 5 mg/L for dissolved oxygen [SFRWQCB 2004]) are not violated for at least the initial release in each receiving water body or as required in NPDES permits issued by the RWQCB. Data shall be reported to the RWQCB as required. [Source: PMP]

BMP Hydrology-19: The District would obtain storm drain capacity information from the responsible municipality prior to discharge to a storm drain. Discharge rates to the storm drain would be maintained below its conveyance capacity. [Source: WUDPPP BMP CM-A]

BMP Geology-1: In considering access routes, slopes of greater than 20 percent should generally be avoided if possible. Subsequent to access, any sloped area should be examined for evidence of instability and either revegetated or filled as necessary to prevent future landslide or erosion. [Source: PMP]

BMP Biology-5: All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods would be thoroughly inspected for wildlife by properly trained construction personnel before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox, or any other sensitive species particularly state or federally listed species, is discovered inside a pipe, that section of pipe would not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity [Source: PMP]

Mitigation Measure Biology-13: Burrowing owl surveys would follow the survey Protocol and Mitigation Guidelines established by the Burrowing Owl Consortium (1993). When avoidance is impossible, passive relocation of owls in occupied burrows would be performed according to the guidelines.

BMP Noise-3: The District would implement practices that minimize disturbances to residential neighborhoods surrounding work sites.

- a. Internal combustion engines would be equipped with adequate mufflers.
- b. Excessive idling of vehicles would be prohibited.
- c. All construction equipment would be equipped with manufacturer's standard noise control devices.
- d. The arrival and departure of trucks hauling material would be limited to the hours of construction. The use of jake brakes is prohibited in residential areas. [Source: BMP Handbook BMP NO-2 Residential Noise Management]

BMP Noise-4: Workers or contractors shall notify residents through flyers, mailers, or door-to-door notification of any work within 1,000 feet of a residence that may cause excessive noise. [Source: PMP]

BMP Air Quality-1: The access road and interior circulation routes associated with any project requiring continuous daily access for greater than 1 week shall be treated with a dust suppressant and maintained in such a manner as to insure minimum dust generation subject to the Air Quality Management District's dust regulations. [Source: PMP]

BMP Air Quality-3: No burning would be allowed on any project. Idling of internal combustion engines shall be held to an absolute minimum. All vehicles with internal combustion engines shall be fitted with spark arresters. [Source: Water Supply Division No. 15.03]

BMP Air Quality-4: Rapid-cure asphalt shall not be used in accordance with BAAQMD, Regulations 8, Rule 15. [Source: Water Supply Division No. 15.03]
No mitigation required

BMP Air Quality-5: Some of the sediment removal sites could have sediment that is rich in organic matter decaying in an anaerobic condition, which generates assorted malodorous gases, such as reduced sulfur compounds. These sediments shall be handled in a manner that avoids impacting sensitive receptors.

1. The District shall avoid stockpiling potentially odorous sediments within 1,000 feet of residential areas or other odor sensitive land uses.
2. Where appropriate, odorous stockpiles shall be disposed of at an appropriate landfill.
[Source: BMP Handbook AQ-4: Avoid Stockpiling Potentially Odorous Sediments]

BMP Aesthetics-1: Avoid establishing staging areas within 500 feet of any scenic resources such as designated vista points along urban or rural trails, visible rock outcroppings, or designated historic buildings. [Source: PMP]

Mitigation Measure Aesthetics-1: Follow-up maintenance shall be performed on sites that have been seeded and planted. [Source: SMP Provision No. 2.9]

1. Maintenance shall include replacing dead or dying plants where appropriate, weeding, removing non-native plant colonizers, and ensuring that all plants receive sufficient water.
2. Irrigation shall be implemented as needed throughout the establishment period.

Mitigation Measure Aesthetics-3: Whenever possible, work hours should be limited to 7:00 A.M. to 7:00 P.M. Monday through Saturday. When activities such as repair have to be performed 24 hours per day, lighting shall conform to restrictions of the City where they occur (identified from Table 5.9-1). Measures such as directing lighting downward and away from residences, reducing bulb wattage to the minimum required, and utilizing shrouds shall be implemented. [Source: PMP]

Mitigation Measure Land Use-1: Prior to conducting maintenance activities that may require staging and access on private grazing lands or lands that support livestock, the District shall contact property owners to ensure that animals are moved or secured, if necessary. If any fences

or gates must be utilized, District staff shall secure all gates after access or use temporary fencing and gates for any fences that need to be cut. The District shall repair any damage to fences after access, or renegotiate access with property owners per District easement contracts. [Source: PMP]

Mitigation Measure Land Use-2: Prior to maintenance that may require access or staging in agricultural fields, the District shall contact property owners to be sure that access would not damage crops. If possible, access through agricultural fields shall be avoided during the growing season. If access is necessary, the District shall create a path of least effect to the crops and compensate farmers for any damage to crops pursuant to renegotiated terms or contingencies decided prior to work. [Source: PMP]

The following measures are those applicable to the T&E species and critical habitats that may be affected by the Proposed Action. As with the measures above, these are incorporated from the District's Draft EIR for their entire PMP and the original numbers of each measure are preserved. These measures are hereby incorporated into the Proposed Action¹. Annual reports would be prepared for the first two years to evaluate the PMP; after the first two years, reporting may be biennial.

BMP Hydrology-1: Access shall be provided as close to the work area as possible, using existing ramps where available and planning work site access so as to minimize disturbance to the creek bed, creek banks, and the surrounding land uses. [Source: SMP Provision No. 4.3]

BMP Hydrology-3: Erosion control matting or fabric shall be installed if necessary. [Source: SMP Provision No. 2.7]

BMP Hydrology-4: Temporary fills, such as for temporary roads, access ramps, diversion structures, or cofferdams, shall be removed upon finishing the work. [Source: SMP Provision No. 3.13]

BMP Hydrology-5: Discharge volume reduction options (such as performing maintenance activities with partially full pipelines, employing sectioning valves, and/or opportunities for reuse of water) would be considered prior to draining the pipeline. [Source: PMP]

BMP Hydrology-6: Discharge rates would be ramped up slowly such that the increase in flow rate in the receiving water is gradual and scouring of the channel bed and banks does not occur. [Source: PMP].

BMP Hydrology-7: Flows would be diverted around sensitive, actively eroding, or extremely steep areas to prevent erosion. Flow diversion methods might include use of flexible piping

¹ It should be noted that in the EIR, many of these measures are named "mitigation measures." These names are retained in this EA, to maintain consistency between the two documents. However, Section 7 of the ESA requires Federal agencies to avoid and minimize effects and does not require "mitigation" in the form of compensation (such as land acquisition), unless it is necessary to avoid jeopardy or adverse modification or destruction, or if it actually reduces the level of take. Most of the "mitigation measures" listed below do serve to avoid or minimize take, with the exception of those that specify compensation for the loss of critical habitat or for the loss of vernal pool fairy shrimp habitat.

and/or placement of sandbags to alter flow direction, or equivalent measures. The new flow path and discharge point would be monitored for signs of erosion. [Source: WUDPPP BMP CM-H]

BMP Hydrology-8: To protect exposed soil and vegetated surfaces from erosion, erosion control blankets, mats, or geotextiles would be placed over the erodible surface. A number of materials are available ranging from straw blankets to synthetic fiber with netting. The blanket can be removed following completion of the discharge or left in place to provide a more permanent means of erosion control. Instructions for installation can be found in the Construction Volume of the California Stormwater BMP Handbook (CASQA, 2003) or in the WUDPPP. [Source: WUDPPP BMP CM-B and CM-G]

BMP Hydrology-9: Velocity dissipation devices can be installed at frequently used discharge sites to reduce flow velocities and capture sediment. These devices typically combine plantings of willows with placement of angular stone riprap on top of filter fabric to create an apron at the discharge point. Where this BMP is recommended for permanent stabilization of existing erosion, minor grading may be necessary. Design and layout recommendations that appear in the Construction Volume of the California Stormwater BMP Handbook (CASQA, 2003) would be followed to the extent possible. [Source: SMP Provision 1.5]

BMP Hydrology-10: Temporary flow path check filters can be placed at single or multiple locations along the flow path to remove sediment from discharges and slow the rate of flow. Check filters are constructed of rock, sandbags, fiber rolls, or equivalent materials, and would be installed following recommendations in the WUDPPP and Stormwater BMP Handbook (CASQA 2003). Each check filter would be modified with a notch or low spot to direct the flow path and prevent discharges from flowing around the sides of the check filter. Sediment that becomes trapped behind the check filters would be carefully removed to avoid disturbing the channel or swale and disposed of appropriately. Flow path check filters are typically applied where discharges to upland areas are planned. In channel settings, the temporary installation of flow path check filters would likely require a Streambed Alteration Permit from the California Department of Fish and Game (CDFG) per Fish and Game code section 1602. This permit would require that certain provisions are followed, such as restricting use to only dry flow conditions. [Source: WUDPPP BMP CM-C]

BMP Hydrology-11: Streambank stabilization measures (such as biostabilization with willow plantings, hydroseeding, and placement of riprap) would be employed where excavation projects disturb stream channels and their associated riparian areas. Streambank stabilization measures would be site specific and may be described in the Streambed Alteration Permit. Design and installation recommendations for several methods are described in the Stormwater BMP Handbook (CASQA 2003). [Source: SMP Provisions 1.5 and 2.3]

BMP Hydrology-12: Existing access ramps and roads to streams shall be used where possible. If temporary access points are necessary, they shall be constructed in a manner that minimizes impacts to streams. [Source: SMP Provision No. 2.2]

BMP Hydrology-13: Where practicable, maintain a vegetated buffer strip between staging/excavation areas and receiving waters. [Source: WUDPPP BMP CM-B]

BMP Hydrology-14: Erosion control measures shall be utilized throughout all phases of the operation where sediment runoff from exposed slopes threatens to enter waters of the State. At no time shall silt laden runoff be allowed to enter water of the State. [Source: SMP Provision No. 1.5]

BMP Hydrology-20: A trained individual would observe flows in the receiving water. If it appears that discharges are approaching bankfull (associated with the flow that just fills the channel to the top of its banks and at a point where the water begins to overflow onto a floodplain) in the channel or any structure within the channel, discharge rates would be reduced. Source: PMP]

BMP Hydrology-15: RWQCB objectives for temperature change in receiving waters (measured 100 feet downstream of discharge point) shall not be exceeded. Receiving water and discharge water may be monitored for temperature changes after a comparison of ambient temperature to pipeline water temperature suggests the potential for change. [Source: PMP]

BMP Hydrology-18: Receiving water may be monitored for dissolved oxygen and pH to ensure that relevant Basin Plan standards are not violated for at least the initial release in each receiving water body or as required in NPDES permits issued by the RWQCB. Data shall be reported to the RWQCB as required. [Source: PMP]

Mitigation Measure Hydrology-1: For all exposed earthen areas, once the maintenance activity is complete or during the appropriate time of year, an erosion control seed mix shall be used, compatible with the surrounding environment. The mix would consist of California native grasses (e.g., *Hordeum californicum*, *Elymus glaucus* ‘Berkeley’, *Bromus carinatus*) on slopes flatter than 3:1. ‘Zorro’ Annual Fescue would be added to the mix where slopes are steeper (e.g., 2:1). Erosion control matting or fabric shall be installed if necessary. [Source: SMP Provision No. 2.7]

Mitigation Measure Hydrology-2: The Water Utility Discharge Pollution Prevention Plan (WUDPPP) Guidance Manual (SCVWD 2001c) shall be followed for all discharges as appropriate. To minimize erosion, the Erosion Control BMPs shall be implemented as directed by the WUDPPP. [Source: PMP]

Mitigation Measure Hydrology-3: The discharge location and receiving water would be observed for signs of erosion by a trained individual. If erosion is evident, flow rates would be reduced. If erosion continues to occur, discharges would be terminated until appropriate erosion control BMPs are installed. Monitoring would be conducted just prior to the start of the discharge and regularly (i.e., every hour, every four hours, every eight hours) during the discharge. Monitoring frequency would depend on the nature of the discharge and the erosion in the area.

Mitigation Measure Hydrology-4: An environmental monitor will walk along each discharge drainage to the termination of the drainage or 500 feet downstream to inspect for erosion after a draining is complete. If erosion is detected, reclamation measures should be taken to correct the erosion. Correction measures shall include recontouring the land to its previous state and revegetating with the dominant native grass species in the area, if necessary. [Source: PMP]

Mitigation Measure Hydrology-5: Prior to any ground disturbing work the District shall prepare an Erosion Control Plan to be included in the Excavation Plan. At a minimum, the plan shall include: [Source: PMP]

- A proposed schedule of grading activities
- Identification of any critical areas of high erodibility potential and/or unstable slopes
- Contour and spot elevations indicating runoff patterns before and after grading
- Identification of erosion control measures on slopes, lots, and streets. Measures would be based on recommendations contained in the “Erosion and Sediment Control Field Manual” published by the San Francisco RWQCB (SFRWQCB 2002). Erosion control measures such as placement of silt fencing or straw wattles shall be utilized to prevent sedimentation from runoff from graded surfaces into any waterways or wetlands.
- Soil stabilization techniques such as short-term biodegradable erosion control blankets and hydroseeding
- Post excavation inspection and cleaning of drainage facilities for accumulated sediment

Mitigation Measure Hydrology-6: RWQCB objectives for turbidity in receiving waters (measured 100 feet downstream of project site in streams and 50 feet downstream in lakes) shall not be exceeded². Receiving water and discharge water would be monitored by a trained individual for turbidity prior to the discharge and periodically throughout the drainage operation. Silty or turbid water from project activities shall not be discharged into streams, lakes or storm drains. Such water shall be treated prior to release by one of the following methods [Source: WUDPPP BMP SC-1 and SC-2]

- Sprayed over a large area outside of the stream channel to allow for natural filtration of sediments [Source: WUDPPP BMP]
- Discharged to the sanitary sewer system (requires approval from local sanitary district) [Source: WUDPPP BMP CM-A]
- Treated with an on-line filter system or storm drain inlet protection [Source: WUDPPP BMP CM-D and CM-E]
- Pumped into a holding facility or into a settling pond located in a flat stable area [Source: PMP]

BMP Biology-1: Woody material (including live leaning trees, dead trees, tree trunks, large limbs, and stumps) would be retained unless it is threatening a structure or impedes reasonable access, in which case it would be retained on site but moved to a less threatening position. [Source: PMP]

BMP Biology-2: All trash would be removed from the site daily to avoid attracting potential predators to the site. [BMP Source: PMP]

² In the Central Coast (Region 3): where natural turbidity is between 0 and 50 JTU, increases shall not exceed 20 percent; where natural turbidity is between 50 and 100 JTU, increases shall not exceed 10 JTU; and where natural turbidity is greater than 100 JTU, increases shall not exceed 10 percent (CCRWQCB 1994). Turbidity objectives in the Central Coast Basin Plan are expressed in the no longer used Jackson turbidity units (JTU). Nephelometric turbidity units (NTU) are approximately equal (but not identical) to JTU.

BMP Biology-3: Building materials and construction materials would not be stockpiled or stored where they could be washed into the water or where they would cover aquatic or riparian vegetation. [BMP Source: PMP]

Mitigation Measure Biology-1: If the biologist notes potential wetland areas, placement of fill within the potential wetland areas would be avoided if possible (such as by moving the road, etc.). If avoidance is not possible an Army Corps of Engineers (ACOE) jurisdictional wetland delineation would be performed according to the 1987 wetland delineation manual and the appropriate Section 404 and 401 processes followed. Placing fill within a jurisdictional wetland would require implementation of mitigation as included in the ACOE and RWQCB permits and may include local wetland enhancement, replacement, or creation of wetlands at a location approved by the appropriate regulatory agencies, such as Calero Creek.

Mitigation Measure Biology-7: All off-road access routes to vaults or other service areas would be surveyed and delineated by a biologist prior to use. The access roads would be flagged such that sensitive plant species, vernal pools (potentially occurring in rural areas), and animal burrows are avoided. Routes would be limited to not more than 15 feet wide. Personnel would be required to adhere to marked paths. No other off-road travel would be allowed.

Mitigation Measure Biology-8: For any staging and access and/or excavation in any critical habitat area, a biological monitor would be present to oversee work. The monitor would have the authority to stop operations if any threat to critical habitat is presented.

Mitigation Measure Biology-12: For any staging, access, and excavation activity, the District would implement the District's Nesting Bird Procedures, (included in the PMP). The Nesting Bird Procedures ensure no adverse impacts to any migratory bird species as protected under the Migratory Bird Treaty Act of 1918, including all federal and state listed sensitive bird species. The Nesting Bird Procedures are summarized below:

- a. Migratory bird surveys would be performed prior to any project-related activity that could pose the potential to affect migratory birds. Affected areas would be inspected/monitored prior to commencement of the nesting season, and as frequently as necessary thereafter, to provide deterrence measures and prevent nesting by birds. Inactive bird nests may be removed, with the exception of raptor nests.

During the nesting season, all project areas that may be impacted by construction, including all vegetation, grounds, and bridge(s), would be inspected with sufficient frequency as needed, to identify any new and partially-built nests. No birds, nests with eggs, or nests with hatchlings shall be disturbed.

- b. Vegetation can be cleared and maintained to prevent migratory bird nesting. All necessary vegetation clearing would be performed prior to the nesting season, if at all possible. No vegetation would be trimmed back unnecessarily, including trees and/or shrubs growing near the right of way, which overhang onto the work site.
- c. Nesting exclusion devices may be installed to prevent potential establishment or occurrence of nests in areas where construction activities would occur. All nesting exclusion devices would be maintained throughout the nesting season, or until completion of work in an area makes the devices unnecessary. All exclusion devices would be removed and disposed of when work in the area is complete.

Mitigation Measure Biology-14: This BMP would be implemented for any staging and off-road access, and excavation within San Joaquin kit fox habitat (adopted from Reclamation's O&M BO and the *Standardized Kit Fox Construction Practices* developed by the Service (1997), except that the 20-mph speed limit is changed to 15 mph, the standard for District unpaved roads.

- A qualified biologist would conduct pre-construction presence/absence surveys for kit fox no less than 14 days and no more than 30 days prior to any construction-related activities. The primary objective is to identify kit fox habitat features (potential dens and refugia) on the project site and evaluate them sufficiently to ascertain if they are in use by a kit fox. If an active kit fox den is detected within (or immediately adjacent to) the area of work, the Service would be contacted immediately to determine the best course of action. If no kit fox activity is detected, the work shall continue as planned and a written report would be submitted to the Service within five days after completion of the surveys.
- All construction-related activities should be preceded by a tail-gate training session, the primary purpose of which would be to describe to construction workers the importance of implementing construction related activities that would minimize potential construction related impacts to kit foxes.
- Project-related vehicles should observe a 15-mph speed limit in all project areas, except on city or county roads; this is particularly important at night when kit foxes are most active. To the extent possible, nighttime construction and traffic should be avoided. Off-road traffic outside of designated project areas is unacceptable.
- To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than 2-feet deep would be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. In addition, these structures would be thoroughly inspected by properly trained construction personnel each morning for kit fox or other species. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.
- All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods would be thoroughly inspected by properly trained construction personnel for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe would not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity.
- All food related trash items such as wrappers, cans, bottles, food scraps would be disposed of in a closed container and removed at least once a week from a construction or project site and signs would be placed at the construction site that prohibit feeding wildlife.
- No firearms would be allowed on the project site.
- To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets would be permitted on project sites.

- Use of rodenticides and herbicides in project areas would be restricted.
- A representative would be appointed by the project proponent who would be the contact person for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual (the representative's name and address shall be provided to the Service).
- Upon completion of the project, all areas subject to temporary ground disturbance, including storage and staging areas, temporary roads, pipeline corridors, etc. would be re-contoured if necessary, and revegetated to pre-project conditions.
- In the case of trapped animals, escape ramps or structures would be installed immediately to allow the animal(s) to escape, or the Service should be contacted for advice.
- Any contractor, employee(s), or military or agency personnel who inadvertently kill or injures a San Joaquin kit fox would immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured, or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045.

Mitigation Measure Biology-16: Pipeline discharge for maintenance work would preferentially be performed during winter months, when storm events are more common and when water is naturally highest. Discharge flows are then a minimal portion of overall stream or river flow. Fahrenheit in either direction, and overall receiving water does not exceed 68 degrees Fahrenheit in steelhead and Chinook salmon inhabited streams.

Mitigation Measure Biology-17: Temporary fish screens shall be applied to any secondary or side channel that could uptake pipeline flows, causing attractant flows that would subside once draining is complete. The key locations include along Ross Creek at the Almaden Valley Pipeline, along the Guadalupe secondary channel along the Central Pipeline. Flows from the Cochrane channel to Coyote Creek should be directed into the creek and controlled during high flow conditions when secondary channels may occur or can form easily. Screens would be periodically monitored for debris, and constructed with a second layer of plastic construction fencing on the side exposed to the fish. Exotic species trapped by the screening would be removed from the wild.

Mitigation Measure Biology-18: In areas where temporary velocity dissipation devices or temporary spreader dams are proposed for installation, the area would first be surveyed by a qualified biologist to ensure that no steelhead or Chinook salmon fry or eggs; no California red-legged frog eggs or larvae; and no California tiger salamander eggs or larvae are present within 500 feet upstream and downstream of the proposed structure (within the stream channel). If fry or eggs are found and could be impacted by placement of flow dissipation BMPs, then the discharge point would either not be used, be redirected upstream in a cleared area (such as with a hose), or discharge would not occur until the eggs and/or fry have moved from the area. [Source: PMP]

Mitigation Measure Biology-19: If a pipeline water discharge is scheduled to occur from January through August along any of the pipelines where there is potential California tiger salamander, California-red legged frog, and/or foothill yellow legged frog habitat, a survey for the species

with potential to occur would be performed by a qualified biologist within 1 week prior to release. If California tiger salamander, California red-legged frog, or foothill yellow-legged frog eggs or larvae are not found within 500 feet upstream or downstream of the release point, absence would be re-verified within 24 hours of installation of BMP's and commencement of release. Release can commence if no eggs or larvae are found 500 feet upstream or downstream during the second survey. BMPs that control velocity (velocity dissipation) and flow rate would be implemented in any area with potential Special-Status amphibian habitat. If eggs or larvae are found within 100 feet downstream of a release point, the discharge point would not be utilized, if possible. Velocity reduction can be accomplished either by slowing release, decreasing release volume at the point, and/or applying dissipation in the immediate area of the discharge point as long as dissipation devices would not affect any adult Special-Status amphibians, their eggs, or larvae.

A qualified biologist would oversee implementation of Mitigation Measure Biology-19.

Mitigation Measure Biology-20: During pipeline draining, wedge wire screens, will be placed over the discharge openings of gravity drain gates and on the suction and discharge piping of any submersible pumps used for pipeline discharge to minimize discharge of non-native species.

“New BMP”: In cases where sections of stream that would receive discharge are dry, receiving waters will be monitored to quantify distance of re-watering. In order to avoid steelhead stranding, discharge rates will be implemented to avoid hydrologic connectivity; monitoring will be conducted to ensure there is no connectivity.

Mitigation Measure Biology-25: If access road reconstruction or repair is necessary within any critical habitat area for California tiger salamander the amount and type of area that must be filled would be quantified to determine if the area supports the primary constituent elements. If the impact is temporary then restoration measures would be used to restore the value of the temporarily disturbed area. If the impact is permanent and impacts to critical habitat (i.e., presence of the primary constituent elements) are to occur then a similarly valued area at a 3:1 ratio would be preserved within a critical habitat unit. The District would 1) avoid road reconstruction or repair, whenever feasible, in areas with known estivation habitat. Roads would be moved to a new alignment or decommissioned if the option is feasible. If avoidance is not feasible, compensation as described above would be implemented; 2) minimize impacts by conducting any such work during times the species is least likely to be negatively impacted, and/or using fencing to keep the species away from the construction zone; 3) restore impacted areas to pre-work conditions; and finally 4) if unable to accomplish 1 thru 3; any residual effect would be compensated for following the above approach.

Mitigation Measure Biology-27: The District would follow all BMPs outlined in their 2003 Comprehensive List that pertain to the San Jose Riparian Corridor Policy. [Source: PMP]

Additionally, pursuant to the District's Comprehensive BMPs:

- The District would strive to minimize vegetation removal and would revegetate sites as appropriate to provide erosion control and restore riparian habitat value.

If removal of trees cannot be avoided, then these additional mitigations would be implemented:

- A qualified botanist would conduct a pre-staging tree survey in order to identify species and circumference at appropriate heights, of all trees to be removed or impacted by staging and/or access activities. Once the survey is completed, a restoration plan would be developed that indicates the ratio, location, and species of trees to be planted.
- Trees would be replaced at acceptable ratios set forth by the appropriate agency. Planting stock would be collected locally (within a 5-mile radius of the project site) to the extent possible in order to maintain genetic integrity of the species to be replaced and planting would be completed during the period between November and January. New plantings would be installed in an environment suitable for their establishment and growth and would be maintained, including protection from invasive species and deer browsing, and irrigated for a period of not less than three years.
- For trees remaining in the vicinity of the project site, problems of soil compaction resulting from project maintenance activities need to be prevented. In order to minimize impacts to remaining trees, fencing would be installed around the edge of the tree canopy or at the edge of the construction areas.

Mitigation Measure Hazards-1: During the planning phase for activities that involve discharge, project coordinators shall contact the group implementing the pesticide application to verify that no temporal or spatial overlap in discharge and pesticide application would occur. Information on pesticide application should be included in the project-specific draining plan. [Source: PMP]

BMP Noise-1: Workers or contractors shall carry noise abatement devices or equipment to construct a noise abatement device for work that must be performed outside of normally allowed operating hours, either between 7:00 a.m. and 7:00 p.m. or as dictated by local code. Equipment to construct a noise abatement device could include large pieces of plywood, insulating material, egg carton material, etc. [Source: PMP]

BMP Noise-2: District staff shall keep noise from construction activities as low as possible. In no case shall noise levels produced by the Contractor exceed any of the following maximums:

- No individual piece of equipment shall produce a noise level exceeding 83 dbA at a distance of 25 feet. [Source: BMP Water Supply Division No. 15.02]
- The noise level at any point outside of the property line or temporary construction area shall not exceed 86 dbA during work hours or 60 dbA during nonworking hours. No equipment violating these standards would be allowed to operate. [Source: BMP Water Supply Division No. 15.02]

The District staff shall contact the local jurisdiction to determine what, if any, additional noise or equipment limitations apply and shall conform to those regulations as well. [Source: PMP]

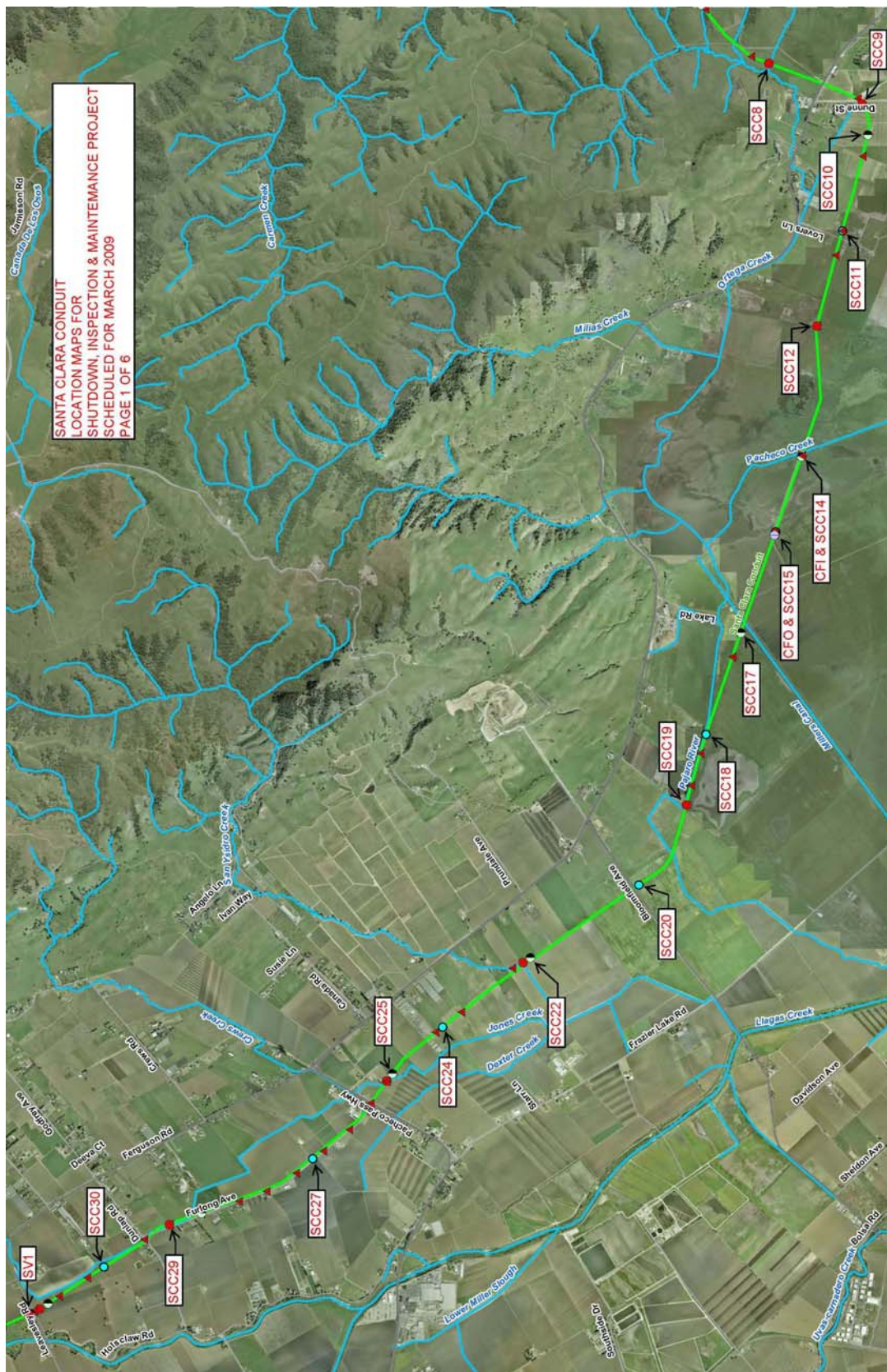
Mitigation Measure Noise-1: Work shall not be conducted between the hours of 7:00 p.m. and 7:00 a.m. or on Sundays, except when/where the nature of the activity requires work beyond this timeframe or where a local jurisdiction has more stringent work hour requirements. Activities shall comply with any additional requirements of the local jurisdiction regarding hours of

construction. Permits for exceptions to noise ordinances shall be obtained as appropriate.
[Source: PMP]

Mitigation Measure Aesthetics-2: The District shall replace trees as follows:

- Native trees that are lost to bank protection impacts shall be replaced at a 3:1 ratio and non-native trees that are lost shall be replaced at a 2:1 ratio.
- Trees removed for any maintenance work shall be replaced at the site, if feasible.
- Replacement of heritage-sized trees (greater than 18 inches dbh) would be consistent with local ordinances.

[Source: SMP Provision No. 2.8]



Section 3 Affected Environment & Environmental Consequences

3.1 Air Quality

3.1.1 Affected Environment

Santa Clara County falls under the jurisdiction of the San Francisco Bay Area Air Quality Management District (BAAQMD). The San Francisco Bay Area has been designated as attainment for carbon monoxide (CO), oxides of nitrogen (NO_x), sulfur dioxide (SO₂), and lead (Pb). The area is in non-attainment for ozone (O₃) and particulate matter under 10 microns in diameter (PM₁₀) and as unclassified for particulate matter under 2.5 microns in diameter (PM_{2.5}) (BAAQMD 2004b).

San Benito County falls under the jurisdiction of the Monterey Bay Unified Air Pollution Control District (MBUAPCD). The air basin is a non-attainment area for the State Ambient Air Quality Standards for ozone and PM₁₀ and unclassified for PM_{2.5} (MBUAPCD 2004). Ambient air quality is currently being monitored for PM_{2.5} at the Salinas and Santa Cruz air monitoring stations (BAAQMD 29004b).

3.1.2 Environmental Consequences

No Action

The No Action Alternative would result in SCVWD waiting for approval of the PMP. The Santa Clara Conduit could degrade if timely maintenance did not occur and the system would be compromised.

SCVWD currently maintains pipelines with the necessary vehicles and travel. The current number of maintenance related vehicular trips does not conflict with any of the air quality plans (BAAQMD's Clean Air Plan, the Air Quality Management Plan for the Monterey Bay Region, or the Particulate Matter Plan, and Carbon Monoxide Plan).

Proposed Action

Staging and access involves the transport of materials to a project site and the storage of those materials on site.

The Proposed Action activities would require travel to and from project sites both on highways and residential streets as well as on recreational paths and some unpaved or off-road areas. Traffic is a main generator of particulate matter and precursors to ozone; however, activities would require relatively small maintenance fleets (less than 10 vehicles). The contribution of pollutants from maintenance vehicles relative to the contribution from the existing traffic in the Proposed Action area would be indiscernible.

Draining pipeline water for activities would not include emission of criteria pollutants at levels that would prevent any of the air plans from being implemented.

Most pipeline repair work would occur within a pipeline. Repair could involve some welding, soldering, and cementing of joints and pipeline components; however, the scale and size of repair

work would be limited to a few areas. Repair work emissions would not interfere with implementation of the Basin Plan.

Cumulative Effects

SCVWD currently maintains pipelines and the Proposed Action would not cause the generation of new sources of traffic that could conflict with any of the air quality plans under which the pipelines fall (BAAQMD's Clean Air Plan, the Air Quality Management Plan for the Monterey Bay Region, or the Particulate Matter Plan, and Carbon Monoxide Plan).

Repair activities would use small quantities of various emission-producing materials, such as primer, NSF International-approved paint, and epoxy resins for carbon fiber application. Although the physical and chemical properties of the products and their constituents have not been verified, SCVWD expects that minimal amounts of the above-mentioned products would be used.

The potential to cause cumulative air impacts with other SCVWD or local projects could only occur if other construction projects were occurring incidental to the Proposed Action activities. The District Operations Planning and Analysis Unit (OPAU) would determine any conflicting uses of resources or conflicting scopes of work within SCVWD and among other jurisdictions. If the OPAU allowed a construction project alongside another project, implementation of BMP Air Quality-2 would minimize any cumulative effects. BMP Air Quality-2 incorporates the BAAQMD guidelines for controlling construction-related emissions for PM₁₀ so as to minimize any individual project's contribution to an overall cumulative effect.

3.2 Surface Water Resources

3.2.1 Affected Environment

The major watershed for the Santa Clara Conduit is Llagas Watershed. Streams could serve as direct or indirect receiving waters from pipelines. Beyond stream and channel crossings, the watershed within which the maintenance activity takes place should also be considered because runoff from the maintenance area could impact local waters, which eventually drain to larger systems.

The project area is rural. Drains have been installed to reduce flooding in adjacent uplands. Many of these historical "improvements" removed the hydrologic connection between the channel and the floodplain resulting in impacts such as higher peak flow velocities, erosion problems, reduced riparian habitat values, and flooding in upstream or downstream reaches.

Pacheco Creek

With headwaters in the Diablo Range, Pacheco Creek drains an area of about 169 square miles. Formerly seasonal, the lower reach of Pacheco Creek now flows all summer, possibly as a result of restored groundwater levels.

Jones Creek

Jones Creek joins Llagas Creek approximately 4 miles southeast of Gilroy. The creek is the continuation of Alamias Creek (Durham 1998). The Alamias feeds Jones Creek, which in turn feeds Llagas Creek, a migratory channel for steelhead trout heading to the Pajaro River (Gilroy Dispatch 2005).

Ortega Creek

Oretga Creek flows 4.25 miles to San Felipe Lake, 9.5 miles north-northwest of Hollister (Durham 2001).

San Ysidro Creek

San Ysidro Creek flows 5 miles to a point approximately 1.25 miles east-southeast of Old Gilroy. San Ysidro Creek contains a strip of riparian woodland (Durham 1998).

Millers Canal

Miller's Canal is flat, narrow and relatively impermeable. It was constructed from San Felipe Lake to the Pajaro River to facilitate agricultural development. The canal reduces overflow from the lake and flows directly to a downstream portion of the Pajaro River near the confluence with Llagas Creek. The reduced overflow of San Felipe Lake facilitates farming and grazing around the lake. The canal has a minimal flow for most of the year. (Reclamation 2003)

3.2.2 Environmental Consequences

No Action

The No Action Alternative would result in SCVWD waiting for approval of the PMP. The Santa Clara Conduit could degrade if timely maintenance did not occur and the system would be compromised.

Proposed Action

Reclamation would approve the draining, inspection, maintenance, and refilling of the Santa Clara Conduit. Draining the pipeline would cause temporary increases in the rate and volume of runoff in receiving waters in the Proposed Action area. Discharge of pipeline water into local waterways, open fields, swales, or wetlands would be likely.

Pipeline inspection and maintenance would not directly affect retail customers. Deliveries to San Benito County Water District can be continued during this shutdown; however, flows to the SCVWD would cease.

Turbidity in receiving water could increase. Turbidity, temperature, and pH would be monitored during discharges and water would be treated or discharge rates would be modified if RWQCB objectives were exceeded.

Potential impacts to hydrology and water resources associated with the Proposed Action include potential to cause erosion, degrade water quality, and increase rates of runoff or flooding. The potential to cause erosion during maintenance activities is minimized through the Erosion Control Plan, Bank Protection Work, and re-vegetation. Other projects that disturb vegetation and soils could potentially occur in the same area as the Proposed Action, thus increasing the potential for erosion and siltation from greater human presence in the area.

The Proposed Action has a potential to degrade water quality if exposed soils are flushed into waterways. Receiving water and discharge water would be monitored by a trained individual for turbidity prior to the discharge and periodically throughout the drainage operation. Silty or turbid water from project activities would not be discharged into streams, lakes or storm drains.

Additionally, a fast rise and fall in water levels could cause bank failures and deposition of soil in the channel. Flow rates can be manipulated to control discharges and avoid sudden changes in receiving water flows. Receiving waters and flow paths would be evaluated for erosion potential and observed for erosion at the time of discharge. Pipeline discharge rates would be modified as needed to avoid erosion. If necessary, flow velocities would be reduced through implementation of energy dissipation BMPs and mitigation measures such as small settling ponds which function to pond water prior to release. Soils and vegetation at discharge sites would be protected using a variety of conventional erosion control BMPs.

Bank protection work would occur prior to a planned discharge in areas where banks within 100 feet of the discharge point that appear to show signs of erosion or instability. Bank stabilization (hardscape methods) would be assessed before pipeline shutdown. Areas that show erosion or instability from natural or manmade conditions within 100 feet downstream of a discharge point (and up to 10 feet upstream of the point) would be hardened to further minimize the chances of erosion during water draining. Bank stabilization plans would be prepared prior to the work and the work would be performed in February. Bank stabilization would minimize erosion effects.

Cumulative Effects

Activities that have the potential to degrade water quality would be temporary and would not be expected to contribute to overall cumulative impacts.

The potential to increase or decrease rates of runoff or cause flooding is limited to draining and refilling activities. A trained individual would observe flows in the receiving water. If it appeared that discharges were approaching bankfull in the channel or any structure within the channel, discharge rates would be reduced.

Other projects which introduce water to natural drainage systems could occur in the same systems as the Santa Clara Conduit. Coordination among SCVWD departments would prevent conflicts, and coordination with the Fisheries Aquatic Habitat Collaborative Effort can help resolve issues that relate to streamflow and temperature needs of sensitive fisheries.

3.3 Groundwater Resources

3.3.1 Affected Environment

The occurrence and movement of groundwater and surface water in the project region is dictated by regional climate and hydrologic characteristics but to some degree is also managed by District activities. The project area is located in the Pajaro watershed, which drains south to the Pajaro River and Monterey Bay. The project area is underlain by the Llagas sub-basin. SCVWD is responsible for managing water resources in Santa Clara County. Runoff from primarily rural areas in the foothills is collected in ten reservoirs for storage and/or blending with imported water before being conveyed to groundwater recharge facilities or drinking water treatment plants. SCVWD sells both treated surface water and groundwater to retail agencies that serve the communities within the county via their own distribution systems.

Aquifers within the Santa Clara Valley, Coyote, and Llagas groundwater basins supply nearly half of the SCVWD's total water supply. Groundwater replenishment occurs both naturally and through the SCVWD's efforts to augment natural processes. Percolation facilities, usually

located near the basin's perimeter, are used to increase the recharge of groundwater basins and to compensate for the amount of water withdrawn.

In the low foothills at the edge of the sub-basin, the geologic materials that compose the aquifers are exposed at the ground surface. These zones are collectively known as the "forebay" of the aquifer. In these exposed areas, rainfall, streamflows, and other surface water are able to infiltrate and to seep into the aquifer (Iwamura 1995). The District actively promotes recharge to the aquifer using local and imported water applied to about 390 acres of off-stream percolation ponds located throughout the county. Seasonal dams are also used to encourage in-stream recharge (Reymers and Hemmeter 2001). Release of imported water to streams augments streamflow conditions for fish and wildlife.

3.3.2 Environmental Consequences

No Action

The No Action Alternative would result in SCVWD waiting for approval of the PMP. The Santa Clara Conduit could degrade if timely maintenance did not occur and the system would be compromised.

Proposed Action

Reclamation would approve the shutdown, inspection, and maintenance of the Santa Clara Conduit. The Santa Clara Conduit would be drained and refilled. Draining the pipeline would cause temporary increases in the rate and volume of runoff in receiving waters in the Proposed Action area. Discharge of pipeline water into local waterways, open fields, swales, or wetlands would be likely. As the quantity of water that would percolate to the basin is small (approximately 78 acre-feet or less would be diverted to waterways) it would not have a substantial effect on groundwater quality or quantity.

Cumulative Effects

The Proposed Action activities would be temporary and would not be expected to contribute to overall cumulative impacts.

3.4 Land Use

3.4.1 Affected Environment

The small portion of the pipeline system that falls within San Benito County at the border of Santa Clara County falls within the Santa Clara Valley in the Parajo River Basin. The area is predominantly rural agricultural and grazing land.

Land uses in the watershed transition from open space and rangeland in the headwaters to rural residential and agriculture in the foothills.

Santa Clara Conduit extends across agricultural lands into San Benito County.

No Action

Land use would not change due to the No Action Alternative. An increase in time to wait for the approval of the PMP could lead to loss of pipeline structural integrity.

Proposed Action

Reclamation would approve the shutdown, inspection, and maintenance of the Santa Clara Conduit.

The pipeline would still be drained, inspected, maintenance completed, and refilled. Approval of the Proposed Action would not lead to any land use changes.

Cumulative Effects

The Proposed Action would have the potential to cause erosion; however, this would be minimized through the Erosion Control Plan and re-vegetation. Other projects that disturb vegetation and soils could potentially occur in the same area as the Proposed Action, thus increasing the potential for erosion and siltation from greater human presence in the area.

3.5 Biological Resources

3.5.1 Affected Environment

The vegetation in Santa Clara Valley consists of plant communities adapted to the Mediterranean climate of the region, which is typified by hot, dry summers and cool, moist winters.

The most prevalent vegetation type in the Santa Clara Valley consists of valley and foothill grassland communities. Much of the valley grassland habitat once occurring regionally on fertile alluvial soils, has now been converted to urban uses or to agricultural cropland. The majority of remaining foothill grasslands is utilized for livestock grazing. Native perennial bunchgrasses such as purple needlegrass (*Nassella pulchra*) and a diversity of annual spring-blooming forbs once dominated grasslands. Non-native annual grasses of European origin such as soft chess (*Bromus hordaceus*), Italian ryegrass (*Lolium multiflorum*), and slender wild oats (*Avena barbata*) have invaded native grasslands since European colonization. These non-native species now form the dominant vegetative component of most grasslands in the area. Other prevalent natural communities in the area include riparian woodland habitats. Riparian woodlands occur in relation to many of the seasonal and perennial creeks and rivers of the region.

Agricultural lands include cropland and orchards, as well as cattle and other livestock grazing land.

A species list was obtained from the Service for the four 7.5 minute USGS quadrangles that underlie the action area (Gilroy, Gilroy Hot Springs, San Felipe and Chittenden) at http://sacramento.fws.gov/es/spp_list.htm on December 3, 2008 (document number: 081203064814). Please see Table 3-1 below for those species and critical habitats that are under the Service's jurisdiction.

Table 3-1 Federally Listed Species and Critical Habitat

COMMON NAME	CRITICAL HABITAT	LISTING STATUS	EFFECT DETERMINATIONS
bay checkerspot butterfly	designated	threatened	no effect; no effect on critical habitat
California Least Tern	no	endangered	no effect
California red-legged frog	designated; proposed increase	threatened	may adversely affect; no effect on either designated or proposed critical habitat
California tiger salamander, Central DPS	designated	threatened	may adversely affect, may adversely affect critical habitat
delta smelt	designated	threatened	no effect; no effect on critical habitat

Least Bell's Vireo	designated	endangered	may adversely affect; no effect on critical habitat
Marbled Murrelet	designated	threatened	no effect; no effect on critical habitat
Metcalf Canyon jewelflower	no	endangered	no effect
San Joaquin kit fox	no	endangered	may effect, not likely to adversely affect
Santa Clara Valley dudleya	no	endangered	no effect

Wildlife Movement Corridors

Riparian corridors and waterways are important natural resources and are used by a diversity of wildlife as movement or migration corridors between areas of core habitat. Riparian corridors often link one or more tracts of open space to other areas of open space. This becomes particularly important when animals must navigate from one rural area to another and are forced to move through urbanized zones. Riparian vegetation offers both food and shelter for many species moving through the area.

Exotic and Non-Native Wildlife Species

Pajaro River basin has been subject to the introduction of a number of exotic fish species. It is made up of introduced and native fish fauna.

Another notable non-native wildlife species is the bullfrog (*Rana catesbeiana*). Primary concerns are competition with and predation upon native herpetofauna such as the California red-legged frog, *Rana aurora draytonii*. Bullfrogs are found throughout Santa Clara County in lakes, streams and rivers.

Special-Status Amphibian Species

Amphibians require cool water during larval development. There are no studies delimiting the critical thermal maximum for the California red-legged frog; however, Jennings and Hayes (1989) noted that some species experience stress when exposed to water temperatures at or above 84°F, and can die if exposure is chronic. California tiger salamanders cannot tolerate temperatures over 80°F.

Special-Status Avian Species

Burrowing owls (*Athene cunicularia*) have the potential to occur areas along the conduit, particularly in areas with low-stature vegetation and ground squirrel activity. The least Bell's vireo might occur in riparian habitat near the Conduit; vireos have been detected along Llagas Creek in recent years.

Special-Status Fish Species

The South-Central California coast steelhead occurs in the Pajaro River and its tributaries. This evolutionarily significant unit (ESU) is federally listed as a threatened species.

Salmonids spawn at depths of 6 to 60 inches, current velocities of 0.7 to 5.1 feet/second, and in gravel of 0.25 to 5 inches in diameter (Smith 1973; Hunter 1973; Bovee 1978; Wesche and Wesche and Rechar 1980). Steelhead migrate from December through April when stream flows are relatively high. The minimum depth required for successful migration of adult steelhead is 7 inches. Intermittent streams are often used by steelhead for spawning (Everest 1973; Kralik and Sowerwine 1977; Carroll 1984). Most of the fry produced in these habitats migrate to perennial streams soon after hatching.

Special-Status Mammals.

San Joaquin kit fox (*Vulpes macrotis mutica*) and their dens could be in the pipeline area. The pipeline area is within the northwestern segment of the species' range. Although there have been a few kit foxes sighted nearby, the habitat is more mesic than the good-quality habitat in the southern portion of the range. Also, the San Joaquin kit fox's preferred prey, kangaroo rats, are lacking in the northwestern segment of the range. Therefore, the occurrence probability is very low and at most a few foxes could possibly occupy the pipeline area.

Critical Habitat Designations

Critical Habitat is defined as areas essential for the "conservation" of the species in question. Conservation is defined as using all means necessary to bring a species back to the point it no longer needs the protection of the Endangered Species Act (ESA). Habitat currently occupied by a listed species, "may require special management considerations or protection."

Critical Habitat

The pipeline crosses Critical Habitat for the South Central Coast ESU of steelhead and the Central Populations of California tiger salamander

Non-federally listed Species**Fish and Wildlife**

The following non-federally-listed special status animal species could potentially occur in the affected environment: Western Burrowing Owl and Long-billed Curlew. These two bird species, protected by the Migratory Bird Treaty Act and California Fish and Game Code, were seen in the area during a November 25, 2008 site visit.

3.5.2 Environmental Consequences**No Action**

The No Action Alternative would result in SCVWD waiting for approval of the PMP. The Santa Clara Conduit could degrade if timely maintenance did not occur, and the system would be compromised.

Proposed Action

Reclamation would approve the shutdown, inspection, and maintenance of the Santa Clara Conduit.

The pipeline would be drained, inspected, maintenance completed, and refilled. Reclamation prepared a biological assessment for the PMP and submitted it along with a request for consultation with Service and National Marine Fisheries Service (NMFS). Informal consultation has been completed with NMFS on the PMP. The NMFS "not likely to adversely affect" letter covers the Proposed Action. Reclamation has prepared a biological assessment for the Proposed Action and the Service will utilize it to prepare a biological opinion for the species and critical habitat under their jurisdiction. This EA will not be finalized until ESA compliance has been completed.

Access within some riparian corridors may result in temporary impacts to riparian vegetation as a result of trampling by foot or vehicle traffic, or direct removal of wetland or woody riparian vegetation. Impacts to the riparian habitat would be temporary. Any crushed or removed vegetation would regrow shortly after the project is complete.

Pipeline would be drained directly into channels, streams, or storm drains that empty into channels. Water discharge would not negatively impact riparian areas with implementation of BMPs that control erosion, sedimentation and scour.

Access and staging activities would have limited potential for adversely affecting jurisdictional wetlands. No staging would occur within wetlands, which would be defined prior to project activities. Staging would not involve placement of any base material and would most often utilize already disturbed areas.

Access to some blow-off vaults and valves could require off-road travel. Access may require removing or crushing a limited amount of vegetation. Crushed or trimmed vegetation would regrow. Impacts from staging and access would not be considered “fill” of a wetland, and would therefore not require ACOE permits (under Section 404 of the Clean Water Act).

Pipeline draining should preferentially occur in winter months during small storm events. During this timeframe wetlands are usually inundated and additional water added from draining would not adversely impact the wetland as long as prevention of erosion, scour, and sedimentation is implemented. Raw water from the Santa Clara Conduit has as good or better water quality than receiving water and would not adversely impact the wetlands as long as measures to control erosion, sedimentation, and scour are implemented.

Pipe or pipe sections are isolated and water is discharged out of special pipeline structures designed for releasing water. There should be only minor effects to upland areas from draining. In regions where discharge points are not adjacent to creeks, standard erosion control techniques would be employed. For areas that may be occupied by listed species, animal burrow inundation would be avoided to the extent possible.

Draining would not affect water levels in a way that would impact sycamores; draining would be preferentially timed in such a way that it would coincide with natural small storm events.

Special-Status Fish Species

The South-Central California coast steelhead trout could potentially be impacted by ground disturbing activities if the activities resulted in sedimentation of nearby waterways. Sediment can have direct impacts on the fishes’ metabolic activities and can have effects on breeding habitat, such as from covering gravels and causing temperature increases. Prior to any ground disturbing work, SCVWD would prepare an Erosion Control Plan. At a minimum, the plan would include:

- A proposed schedule of grading activities
- Identification of any critical areas of high erodibility potential and/or unstable slopes
- Contour and spot elevations indicating runoff patterns before and after grading
- Identification of erosion control measures on slopes, lots, and streets. Erosion control measures such as placement of silt fencing or straw waddles would be utilized to prevent sedimentation from runoff from graded surfaces into any waterways or wetlands.

- Soil stabilization techniques such as short-term biodegradable erosion control blankets and hydroseeding
- Inspection and cleaning of drainage facilities for accumulated sediment

Impacts may occur if large changes in water temperature, water chemistry (dissolved oxygen), water level and flow, or siltation occur. SCVWD would implement control release measures so as not to affect salmonids and other aquatic species.

Water temperature affects all metabolic and reproductive activities of fish, including growth, swimming, and ability to capture and assimilate food (Tebo 1974). Productive salmonid streams should have summer temperatures in the range of 50 to 59° F with an upper limit of 68° F (Hooper 1973). The National Marine Fisheries Service (1996) more recently characterizes properly functioning conditions for adult steelhead as between 50 to 57° F. Salmonids have difficulty extracting oxygen from water at temperatures much over 68° F regardless of the amount of oxygen present (Hooper 1973). The virulence of many fish diseases and the toxicity of most chemicals also increase with increasing water temperatures (Lantz 1971). Steelhead spawning temperatures generally range from 39 to 49° F and must be less than 58° F. During spawning season, a sudden drop in water temperatures may cause all salmonid spawning activity to cease (Reiser and Bjornn 1979).

In fall, winter, and spring, Santa Clara Valley stream temperatures are affected primarily by ambient air temperatures. In summer, stream temperatures are also affected by the amount of cold water released from reservoirs, as well as shade from creek side trees.

Temperature of water release must not alter receiving water temperature in accordance with applicable basin plans. Pipeline water temperature varies, but due to the closed conduit system the water is not exposed to solar radiation and is usually cooler than receiving water and usually closer to receiving water temperatures during winter months.

Pipeline discharge for maintenance work would preferentially be performed during winter months, when storm events are more common and when water is naturally highest. Discharge flows are then a minimal portion of overall stream or river flow. If draining must occur during summer or fall, a slow release is mandatory to ensure receiving waters do not experience a temperature change greater than 2° F in either direction. (Jennings, personal communication 2006). Overall receiving water would not exceed 68° F in steelhead inhabited streams. Receiving water and discharge water would be monitored by a trained individual for temperature prior to discharge and periodically throughout the drainage operation.

Salmonids function normally at dissolved oxygen concentrations of 7.75 mg/L; exhibit various distress symptoms at 6.00 mg/L; and are often negatively affected at 4.25 mg/L (Davis 1975). Low dissolved oxygen levels impair metabolic rate, growth, swimming performance, and overall survival of young salmonids.

Raw water pipeline discharges do not adversely impact dissolved oxygen concentration in receiving waters. The typical discharge process should increase dissolved oxygen levels as water exits the pipe and flows into the receiving water body with turbulent mixing in open air. The small local streams with a relatively high surface area to volume ratio generally maintain good air mixing.

Releases of water from pipelines along rivers and tributaries could potentially influence the locations where steelhead trout spawn. Higher flows in certain reaches can lead to spawning at locations in the riverbed that may be dewatered by subsequent reduced flows before the eggs hatch. These reductions in flow can strand fry in side channels and shallow backwaters that are isolated from the main river channel. While short-term increases in flow from storms often cannot be avoided, flow fluctuations due to scheduled releases of water can be managed to reduce adverse impacts on downstream fisheries. Preferred timing would be for winter releases, which could correspond to steelhead spawning (February). Reduced flow rates would minimize impacts of water level increases and decreases that could strand fish and eggs.

Temporary fish screens would be applied to any primary or secondary or side channel that could receive pipeline flows, causing attractant flows that would subside once draining is complete. Screens would be periodically monitored for debris, and constructed with a second layer of plastic construction fencing on the side exposed to the fish.

Water release could also scour out eggs or young fry if a release is to occur in the immediate vicinity of the eggs or fry. Velocity dissipation devices could be installed at frequently used discharge sites to reduce flow velocities and capture sediment. These devices typically combine plantings of willows with placement of angular stone riprap on top of filter fabric to create an apron at the discharge point. Where this BMP is recommended for permanent stabilization of existing erosion, minor grading may be necessary.

Temporary flow path check filters could be placed at single or multiple locations along the flow path to remove sediment from discharges and slow the rate of flow. Check filters are constructed of rock, discharge cages, sandbags, fiber rolls, or equivalent materials, and would be installed. Each check filter would be modified with a notch or low spot to direct the flow path and prevent discharges from flowing around the sides of the check filter. Sediment that becomes trapped behind the check filters would be carefully removed to avoid disturbing the channel or swale and disposed of appropriately.

In areas where temporary velocity dissipation devices or temporary spreader dams are proposed for installation, the area would first be surveyed by a qualified biologist to ensure that no steelhead fry or eggs; no California red-legged frog eggs or larvae; and no California tiger salamander eggs or larvae are present within 500 feet upstream and downstream of the proposed structure (within the stream channel). If fry or eggs are found and could be impacted by placement of flow dissipation, then the discharge point would either not be used, be redirected upstream in a cleared area (such as with a hose), or discharge would not occur until the eggs and/or fry have moved from the area.

Salmonids' environment can be impaired by both sediment suspended in water and by particles deposited as bedload sediment that can cover spawning gravel and can contribute to elevated water temperatures. Physiological damage includes the adhesion of silt particles to the chorion of salmonids' ova, and the abrasion, thickening, and fusion of the gill filaments. Receiving water and discharge water would be monitored by a trained individual for turbidity prior to the discharge and periodically throughout the drainage operation. Silty or turbid water from project activities would not be discharged into streams, lakes or storm drains.

Special-Status Amphibian Species

California tiger salamander and California red-legged frogs could be impacted if the activities caused sedimentation of habitat and/or animals are harmed or killed by vehicles or heavy equipment.

Sedimentation can have direct impacts on amphibian metabolic activities and can have effects on breeding habitat.

Both the California tiger salamander and California red-legged frog often occupy burrows in upland areas and red-legged frogs may use burrows located closer to riparian areas.

California tiger salamanders spend a portion of the year in burrows (from late January until the first rains in early November), and could be impacted if these burrows are disrupted during construction (which would occur during summer dry season).

Non-breeding California red-legged frogs have been found in both aquatic and upland habitats. The majority of individuals prefer dense, shrubby, or emergent vegetation closely associated with deep, still, or slow-moving water. However, some individuals use upland habitats that are removed from aquatic habitats, seeking cover in ground squirrel burrows and non-native grasslands. Aestivation habitat includes areas up to 300 feet from a stream corridor and includes natural features, such as boulders, rocks, trees, shrubs, and logs. California red-legged frogs may use upland aestivation sites when water levels are low or water temperatures are high, such as in summer and early fall months. Construction equipment could cause direct harm to frogs if burrows inhabited by frogs are collapsed by equipment or if individuals using upland habitat are harmed or killed by equipment.

Any burrows within the construction footprint of areas that are determined to have suitable habitat and potential for occurrence of California tiger salamanders or California red-legged frogs, as determined through habitat reconnaissance surveys, would be examined for individuals following recommendations of the CDFG and/or US Fish and Wildlife Service (Service) or protocol surveys, as appropriate. If any individuals were found, a qualified biologist would remove them to suitable habitat outside of the project limits. Moving of animals would be consistent with applicable Service and CDFG permits.

Special-status amphibians that could be affected by draining pipelines include the California red-legged frog and California tiger salamander.

Water releases would likely occur during breeding, and egg and larval growth periods of California red-legged frog (February) and California tiger salamander. Receiving water temperatures would not change by more than 2° F in either direction during discharge, which would avoid water temperature impacts to any listed amphibian present in receiving water.

California red-legged frogs, and to some extent California tiger salamander, are found in ponds and intermittent and permanent streams with slow or still water. Pipeline water discharges could impact larval amphibians if discharge velocities cause scour or increase base flow velocities to a level that could wash out eggs and larvae. If discharges are conducted between late October and

late January there would be no adverse effect on the species (Jennings pers. comm. to Michelle Korpos 2006).

Pipeline water discharge is scheduled to occur February 2009 where there is potential for California tiger salamander and/or California-red legged frog, a survey for the species with potential to occur would be performed by a qualified biologist within 1 week prior to release. If California tiger salamander and/or California red-legged frog eggs or larvae are not found within 500 feet upstream or downstream of the release point, absence would be re-verified within 24 hours of installation of BMP's and commencement of release. Release could commence if no eggs or larvae are found 500 feet upstream or downstream during the second survey. If eggs or larvae are found within 100 feet downstream of a release point, the discharge point would not be utilized, if possible. Velocity reduction could be accomplished either by slowing release, decreasing release volume at the point, and/or applying dissipation in the immediate area of the discharge point as long as dissipation devices would not affect any adult Special-status amphibians, their eggs, or larvae.

Reservoir water has a potential to contain exotic species. Discharge of the pipeline water has a small potential to introduce predatory species to areas where these species do not occur. Introduction of amphibian competitors, parasites and nuisance species of plants and animals all could potentially be introduced as a result of water transfers. Additionally, pipeline intakes require the pumping of reservoir water in several stages upward of sometimes as much as 200 vertical feet with each stage pump. Pump turbulence and cavitation pressures tend to eliminate most aquatic species from passing through the pipelines.

California tiger salamanders could also be impacted by introduction of predators. During pipeline draining, mesh screens, adhering to Fish Screen Criteria, which list specific mesh sizes, would be placed over the discharge openings of gravity drain gates and on the suction and discharge piping of any submersible pumps used for pipeline discharge to minimize discharge of species, if the water is discharged to a stream that does not regularly receive imported water directly for recharge. It may be necessary to place fish containment screens in side channels that are examined throughout the draining process to remove introduced fish and maintain function against debris clogging.

Sedimentation can have a negative effect on amphibians, their eggs, and larvae either through direct harm or by altering temperature. Turbidity would be monitored to ensure that it would not be greater than 50 NTU or 10 percent more than baseline turbidity levels.

Impacts to Critical Habitat

Critical habitat designations for the South-Central California coast steelhead, California tiger salamander exist within the Proposed Action area. Discharge would have a minor temporary impact on steelhead critical habitat through release of water.

Staging and access would occur outside of channels and therefore would not impact South-Central Coast steelhead trout critical habitat. BMPs to reduce any potential erosion or sedimentation impacts from staging and access would avoid critical habitat impacts for steelhead.

Impact on California tiger salamander critical habitat resulting from draining would be avoided or minimized with implementation of surveys of potential habitat (e.g. abandoned burrows), control of erosion, sedimentation, and scour to protect the habitat. Impacts from draining would only be temporary and would not involve installation of features or construction that could alter the habitat.

Permanent velocity dissipation devices would not be installed in any steelhead critical habitat area.

Some access will occur within California tiger salamander critical habitat, but the access should not affect any of the primary constituent elements of the critical habitat..

Repair

Repair activities would have no direct impact on sensitive species at maintenance site locations. Repair activities would likely occur within pipelines or within staging areas, which are addressed above.

Staging and Access

Migratory animals such as avian species, rodents, and several of the common wildlife species could potentially be impacted by staging and access adjacent to creeks that serve as migratory corridors. Large migration corridors exist for all kinds of wildlife species.

Staging and access are relatively short term and localized activities that would not permanently inhibit migration and migratory patterns.

Some minimal effects to individual migratory species could occur. Migratory animals could be impacted from off-road vehicle access. Off-road travel has a small potential to harm migrating animals such as California tiger salamander. Noise can affect nesting or migrating birds.

Staging and access would not occur within any stream channels and would not interfere with migration of fish species.

Draining

Draining pipelines involves the discharge of the pipeline into channels, streams, or wetlands. The preferential time of discharge for maintenance work is during small storm events. This timing could coincide with migration of anadromous fish. Temperature, dissolved oxygen, flow, and sedimentation impacts would be minimized during discharge so as not to adversely impact anadromous fishes. Placement of flow check filters and velocity dissipation devices could impede fish passage. Minimizing erosion, scour and sedimentation would minimize any other impacts to any wildlife species that inhabits or uses project waterways and riparian corridors.

Species could be impacted primarily by changes in water chemistry, sedimentation, temperature change, or changes in the amount of dissolved oxygen in the water. Flow rates also have the potential to impact some species through scour of fry or eggs if erosion and flow rate are not controlled. These impacts would be avoided by SCVWD draining procedures.

Repair

Pipeline repair requires the shutdown of the pipeline, which can have a secondary impact on species that may reside in percolation ponds if that pipeline is the water source for the pond. Fish have been introduced to the ponds through transfer of eggs and/or fry through the pipeline as well as through transplantation of exotics by surrounding residents or other visitors. Discontinued flows of water could lead to fish kills; however, these fish are common or exotic species.

The actual repair activities would not have an impact on migratory or wildlife species.

Cumulative Effects

Cumulative effects on special-status species and habitats include operations and maintenance activities conducted by Reclamation and SCVWD under the Operations and Maintenance Plan, use by adjacent landowners of insecticides, rodenticides and herbicides and predation on native bird species by feral cats. The potential for the Proposed Action to cause biological impacts is reduced through the application of preventative BMPs and mitigation measures.

Potential impacts to biological resources associated with the Proposed Action activities include potential to degrade habitats such as wetlands, and the potential to harm or injure Special-Status species. Species could be harmed directly through physical injury from equipment and activities, or habitat could be negatively affected such as through sedimentation or crushing of burrows. All impacts to Special-Status species would be minimized through implementation of BMPs, including several BMPs related to hydrology and water quality. Draining activities would be timed with storm events to minimize changes in flow and water chemistry. The SCVWD would ensure that any herbicide use as part of their Stream Maintenance Program would not overlap with the Proposed Action in space and time. All impacts would be temporary and would not be expected to contribute to overall cumulative impacts. While some areas may support Special-Status species, the areas of temporary impact would be relatively small, and like-kind habitats surround the work areas. Thus, it can be anticipated that any species temporarily displaced by maintenance activities would be able to find other suitable habitat close by.

3.6 Geology

3.6.1 Affected Environment

Santa Clara County lies at the southern end of San Francisco Bay in the central Coast Range of California. The county has four distinct physiographic regions or landscape units: 1) Santa Cruz Mountain uplands, 2) Diablo Range uplands, 3) foothills, and 4) bay plains and alluvial valleys. These units reflect the relations of landscape evolution to dominant geomorphic processes, such as the erosion of uplifted mountainous areas and broad, flat plains of recent sediment deposition along San Francisco Bay.

The Santa Clara Conduit traverses areas with soils of high erodible potential. Soils in the vicinity of the Santa Clara Conduit near the CFI/CFO are relatively soft and wet and derived from alluvial to lacustrine sources. Surrounding soils are nearly to completely saturated (depending on rainfall) due to the accumulation of groundwater that actually forms San Felipe Lake.

Santa Clara County is located in a seismically active region. The county is transected by the San Andreas and Calaveras Fault Zones, as well as other potentially active faults.

The San Andreas Fault Zone is located near the west edge of the county in the Santa Cruz Mountains. The Calaveras Fault Zone bisects the county along the northwest-southeast trend through the Diablo Range. Faults in the region have been the source of several large historic earthquakes that have subjected the county to strong shaking and are considered sources of future large earthquakes. Along the San Andreas Fault, a magnitude 8+ earthquake is possible with associated horizontal displacement of a few tens of feet. An earthquake of magnitude 7+ is possible along the Calaveras Fault with lateral displacements of several feet (Santa Clara County 1994).

Tectonic movements include both submergence (subsidence) and uplift. Movements of large landmasses occur as a result of displacement along faults during earthquakes. The extent of these movements could affect local features such as stream gradients. Horizontal displacements generally have little effect on stream gradients; however, vertical movements could impact areas of uplift with the secondary effects of increased erosion and areas of submergence with increased sedimentation. In Santa Clara County, the predominant sense of tectonic movement is horizontal and dominated by strike-slip faulting, although some vertical movement has been documented. Future ground displacement would probably be predominantly horizontal with associated small amounts of vertical displacement (Santa Clara County 1994).

Landslide Hazard Zones and Compressible Soil Hazard Zones have been identified within the Proposed Action area. Steep slopes, active earthquake faults and areas of geologic instability are prevalent (Santa Clara County 1994). Santa Clara Conduit pipeline falls within Santa Clara County. An approximately 2 mile portion falls within San Benito County at the border to Santa Clara County.

The Santa Clara Conduit crosses Fault Rupture Hazard Zones. These segments of faults may be capable of generating a maximum strength earthquake of magnitude 6.75 (SCVWD 2002). San Felipe Lake is a unique geologic feature resulting from the Calaveras Fault. The fault acts as a groundwater barrier, causing a buildup of groundwater on the eastern side. (SCVWD 2002).

Santa Clara Conduit transects a Landslide Hazard Zone. Portions of the Santa Clara Conduit along the Pajaro Basin are within areas with high liquefaction potential.

3.6.2 Environmental Consequences

No Action

The No Action Alternative would result in SCVWD waiting for approval of the PMP. The Santa Clara Conduit could degrade if timely maintenance did not occur, and the system would be compromised.

Proposed Action

The Santa Clara Conduit is an existing structure already in place. The Proposed would not create additional geologic and soil-effects related to seismicity, including rupture along faults, subsidence, and liquefaction. There may be some geologic effects to the pipeline; however, these are previously existing effects and not a result of the Proposed Action.

Landslide hazards are prevalent throughout the Proposed Action area and along various areas of the pipeline. Discharge has the potential to cause erosion. Erosion and sedimentation could have a substantial impact on water quality.

Staging and access involves the transport of materials to a project site and the storage of those materials on site.

Santa Clara Conduit transects Landslide Hazard Zones. Staging and vehicle access would require less than 0.05 acres of surface disturbance for each staging site. Staging sites would be located in feasible locations that are safe for equipment and workers. Staging would involve some off-road access, sometimes down steep gradients; however, such travel would not present a substantial threat to slope stability since access would only be by a few vehicles (from one to ten vehicles are required at a site, but it is likely only one or two would need to travel down the slope, while the rest could stay along existing roads at the top of the slope) and would only be traversed once to a few times for a particular project. Most pipeline features that must be accessed have been accessed in the past and workers travel on the easiest and safest route to the facility. In considering access routes, slopes of greater than 20 percent should generally be avoided if possible. Subsequent to access, any sloped area should be examined for evidence of instability and either revegetated or filled as necessary to prevent future landslide or erosion.

Draining occurs into local waterways or wetland areas; water would not be directed to flow down an upland earthen slope. Draining would not be affected by, or result in, poor slope stability. Erosion control measures would be included. Draining could occur across a stream bank, and could cause minor instability of the bank slope on less vegetated slopes or slopes with higher erosion potential. Bank stability would be ensured through erosion control measures for draining. The surfaces below several blow-off pipes located in banks were armored with rock riprap or concrete sandbag riprap during the pipeline construction. These drainage points would have minimal erosion and would not have bank stability issues.

Equipment on steep grades could create slope instabilities.

Pipeline repair would occur within or around the pipeline and would not be affected by or result in poor slope stability. Repair would occur either within the pipeline itself or on the pipeline exterior. Actual repair activities on the pipeline and its components would not have an effect on slope stability.

The limited amount of surface disturbance required for the maintenance activities would not increase existing seismic hazards.

Cumulative Effects

Cumulative impacts could occur as a result of geologic impacts associated with the Proposed Action activities in combination with impacts associated with any of the other programs at the SCVWD.

Staging and access for other projects in the general vicinity would be coordinated such that similar access routes or staging areas are used, thus reducing cumulative impacts, as long as areas are properly reclaimed.

Cumulative impacts to geologic resources would not occur as a result of implementation of the Proposed Action.

3.7 Cultural Resources

3.7.1 Affected Environment

Cultural resources is a broad term used to describe both ‘archaeological sites’ depicting evidence of past human use of the landscape and the ‘built environment’ which is represented in structures such as dams, roadways, and buildings. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation which outlines the Federal Government’s responsibility to cultural resources. Other applicable cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act, and the Archaeological Resources Protection Act. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking listed on cultural resources on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The area of potential effect (APE) for this undertaking is the Santa Clara Conduit and any potential staging areas, surrounding the conduit, needed to conduct repair activities on this Reclamation-owned and administered water conveyance feature. In 1964, construction started as part of Reclamation’s San Felipe Division of California’s Central Valley Project (CVP); however, due to various setbacks was not fully operational until as late as 1986. The CVP has been determined eligible for inclusion in the National Register using a multiple property listing that evaluates the individual components of the CVP for their significance according to the National Register criteria outlined in 36 CFR Part 60.4. The features of the San Felipe Unit of the CVP including the Santa Clara Conduit are not yet 50 years old and do not meet the criteria for consideration as an historic property as outlined in the regulations at 36 CFR Part 60.4. As a result, the San Felipe Unit and its associated water conveyance features are not contributing elements of the CVP and are not yet eligible for inclusion in the National Register.

3.7.2 Environmental Consequences

No Action

The No Action Alternative would result in SCVWD waiting for approval of the PMP. The Santa Clara Conduit could degrade if timely maintenance did not occur, and the system would be compromised.

Proposed Action

The Proposed Action would result in Reclamation approving draining, inspection, maintenance, and refilling of the Santa Clara Conduit. As this feature is not yet 50 years old, it is not considered historic properties as defined by the regulations at 36 CFR Part 60.4. When the Santa Clara Conduit was constructed, grounds in which it was constructed were significantly disturbed. Barring any new excavation into intact subsurface deposits, the Proposed Action needed to maintain and enhance the water conveyance feature would have no potential to affect historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1).

Cumulative Effects

The Proposed Action would result in no potential to affect historic properties resulting in no cumulative impacts to cultural resources. At such a time when the water conveyance features of the San Felipe Division of the CVP reach 50 years or older, Reclamation may have to consider future maintenance activities for their potential to cause adverse effect.

3.8 Socioeconomic Resources

3.8.1 Affected Environment

Santa Clara County extends over 1,315 square miles and is located at the southern end of the San Francisco Bay. As of January 1, 2005, the county's population was approximately 1.7 million, making it the largest of the nine bay area counties. Santa Clara County is the 5th largest county in California, with 24 percent of the Bay Area's total population living within the county's jurisdiction.

The county has a diverse population, high standard of living, and strong economic vitality. These characteristics have attracted people from all over the world to reside in Santa Clara County. The county's location provides residents with a suburban lifestyle, while providing close access to nature and the outdoors (Santa Clara County 2003).

A portion of the project pipeline length occurs at the borders of Santa Clara County and San Benito County. The service area of SCVWD's water conveyance pipeline system falls within Santa Clara County; however, the infrastructure does not remain completely within the boundaries of the county. Raw water sourced from the federal CVP, is brought in on the Pacheco Conduit from San Luis Reservoir, located in Merced County.

San Benito County covers approximately 1,396 square miles ranging in elevation from near sea level to over 5,000 feet, and has a population of over 56,000. Hollister, the County seat, is approximately 95 miles south of San Francisco, 45 miles inland from Monterey, and 300 miles north of Los Angeles (San Benito County 2005). San Benito County's growth rate has decreased in the last two years.

3.8.2 Environmental Consequences

No Action

The No Action Alternative would result in SCVWD waiting for approval of the PMP. The delay of repairs could lead to pipeline degradation.

Proposed Action

Under the Proposed Action, Reclamation would approve the draining, inspection, maintenance, and refilling of the Santa Clara Conduit. Maintenance of existing facilities does not include provision of additional capacity for growth. No new water conveyance facilities, roads, or other infrastructure would be included as part of the Proposed Action. There would be no growth inducing impacts associated with implementing corrective maintenance defined under the Proposed Action.

The maintenance labor would be sourced from the existing SCVWD mechanical, engineering, and field staff. The maintenance work has been performed on pipelines since initial installation in the 1960s on an as needed basis. The Proposed Action would not result in substantial

increased demands for labor that could lead to population growth within the Proposed Action area.

Work to maintain pipelines has limited temporary physical effects, which could result from staging and access, and draining water from the pipelines into local waterways; however, none of these tasks would result in displacement of persons or housing.

Some pipeline easements do occur through private property. Where pipeline easements pass through private property, SCVWD maintains agreements with the landowners to ensure access and the safety and integrity of the pipelines and residents. SCVWD would rely on these agreements for access to perform the maintenance activities, and the access would not be considered a large impact to residents because SCVWD would follow the terms of the agreements. No other disturbance to residents and their homes would occur as a result of implementing the Proposed Action.

Cumulative Effects

The Proposed Action would not have cumulative effects on population and housing with any other past, present or future project, as the Proposed Action would not affect socioeconomic resources.

3.9 Environmental Justice

3.9.1 Affected Environment

Executive Order 12898 (February 11, 1994) requires federal agencies to ensure that their actions do not disproportionately impact minority and disadvantaged populations.

Santa Clara County is made up of people from diverse cultures, nationalities, and racial groups. As of 2000, approximately 45 percent of the population was White, 26 percent Asian, 3 percent Black, 0.3 percent Native Hawaiian or Pacific Islander, and 17 percent of the population was of some other race or two or more races. The Hispanic or Latino population consists of 24 percent of the total population (DOF 2005).

According to the U.S. Census Bureau (2000), approximately 91.7 percent of the population in San Benito County was White, 1.4 percent Black, 1.6 percent American Indian and Alaska Native persons, 3.1 percent Asian persons, 0.5 percent Native Hawaiian and Other Pacific Islander, and 50.6 percent Persons of Hispanic or Latino origin; and, in 2004, 8.8 percent persons were below poverty.

3.9.2 Environmental Consequences

No Action

The No Action Alternative would result in SCVWD waiting for approval of the PMP. The delay of repairs could lead to pipeline degradation.

Proposed Action

Under the Proposed Action, Reclamation would approve the draining, inspection, maintenance, and refilling of the Santa Clara Conduit. The Proposed Action would not disproportionately affect minority or low-income populations and communities.

A portion of the Santa Clara Conduit is located on the Maida de Fiori Ranch in the Bolsa de San Felipe near San Felipe Lake, in San Benito County. San Benito County is a poorer county than Santa Clara County; however, the Proposed Action would only affect a small number of rural residents located in the northeastern corner of San Benito County. BMPs would be implemented as part of the program to minimize environmental impacts so that residents in San Benito County are not experiencing adverse environmental effects of pipeline maintenance work.

Cumulative Effects

The Proposed Action would not have any long-lasting effects that would disproportionately affect minority or low-income populations and communities. BMPs are implemented anywhere work is performed with potential to impact a natural resource, such that impacts are avoided or minimized.

The Proposed Action would not have any disproportionately adverse effects on minority and low-income populations because of the location and nature of the work. When considered with the potential effects of other projects and programs, the Proposed Action would still not contribute to adverse effects to low-income and minority populations.

Section 4 Consultation and Coordination

4.1 Fish and Wildlife Coordination Act (16 USC . 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The amendments enacted in 1946 require consultation with Service and State fish and wildlife agencies where the “waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted or otherwise controlled or modified” by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of “preventing the loss of and damage to wildlife resources.” The Proposed Action would not impound, divert, control or modify a body of water. Therefore, the FWCA does not apply to the Proposed Action.

4.2 Endangered Species Act (16 USC. 1521 et seq.)

Section 7(a)(2) of the Endangered Species Act (ESA) requires Federal agencies, in consultation with the Secretary of the Interior/Commerce, to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of designated critical habitat. In fulfilling these requirements, each agency must use the best scientific and commercial information available. Section 7(a)(4) requires Federal agencies to confer with the Service(s) on actions likely to jeopardize the continued existence of any species proposed for listing or result in the destruction or adverse modification of any proposed critical habitat.

Reclamation has prepared a biological assessment and submitted it along with a request for formal consultation with Service. This EA will not be finalized until ESA compliance has been completed. Reclamation has received a “not likely to adversely affect” letter from NMFS.

4.3 National Historic Preservation Act (15 USC 470 et seq.)

The Section 106 process of the National Historic Preservation Act is outlined in the Federal regulations at 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action that has the potential to affect historic properties, Reclamation must identify the APE, determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office, to seek concurrence on Reclamation’s findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

4.4 Indian Trust Assets

ITAs are legal interests in property held in trust by the U.S. for federally-recognized Indian tribes or individual Indians. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITAs can include land, minerals, federally-reserved hunting and fishing rights, federally-reserved water rights, and in-stream flows associated with trust land.

Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes with trust land; the U.S. is the trustee. By definition, ITAs cannot be sold, leased, or otherwise encumbered without approval of the U.S. The characterization and application of the U.S. trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions.

There are no ITAs in the Proposed Action area. The nearest ITA is Lytton Rancheria, which is approximately 77 miles northwest of the Proposed Action location.

4.5 Migratory Bird Treaty Act (16 USC Sec. 703 et seq.)

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior (Secretary) may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would include measures to protect migratory birds, ensuring compliance with the Migratory Bird Treaty Act.

4.6 Executive Order 11988 – Floodplain Management and Executive Order 11990 - Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. This action would not adversely affect floodplains or wetlands.

4.7 Federal Clean Water Act (33 USC 1251 et seq.)

Overview

The Clean Water Act (CWA) is a broad statute with the goal of maintaining and restoring waters of the United States. Among many provisions for the control of water pollution, the act also requires permits for filling or discharge of dredged materials to waters of the United States.

Section 402 and 404 of the CWA

Section 402 of the CWA requires a NPDES permit prior to discharge of waste into surface waters. As authorized by the CWA, the NPDES Permit Program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The EPA has delegated the NPDES program to Regional Water Quality Control Boards (RWQCBs). These boards issue NPDES permits and hold jurisdiction over the Proposed Action area.

Section 404 of the CWA establishes a permit program for the discharge of fill or dredged material into waters of the United States. Waters of the United States include navigable waters, interstate waters, and all other waters where the use, degradation or destruction of the waters could affect interstate or foreign commerce. Waters of the United States include tributaries of any of these waters, and wetlands that meet these criteria or that are adjacent to any of these waters or their tributaries.

The Proposed Action is subject to Section 402 of the CWA because it involves discharge into surface waters. Proposed Action activities would require a NPDES Permit for discharges of non-storm water to waters of the State or United States. The Proposed Action would be subject to a Section 404/Nationwide Permit from the US Army Corps of Engineers for placement of temporary or permanent BMPs into waterways (such as flow spreader dams/check dams, etc.), for any placement of fill during reclamation after valve repair in stream banks, and for any placement of fill into wetlands for access road repair.

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Appendix A – Draining Plan

APPURTENANCE NAME/NUMBER	DISCHARGE/ DRAINAGE NOTES	PROPOSED ORDER OF PUMP/DRAIN	REQUIRED PREDECESSORS	DISCHARGE TO	PUMP/DRAIN VOLUME (GAL)	PUMP/DRAIN VOLUME (CU. FT.) (1 CU. FT. = 7.4805 GAL)	ASSUMED PUMP/DRAIN RATE (CFS)	PUMP/DRAIN TIME (HR)	ASSUMED PUMP/DRAIN RATE CHECK (GPM) (1 CFS = 448.8 GPM)	PUMP/DRAIN TIME CHECK (HR)	MOBILIZATION & DEMOBILIZATION TIME (HRS)	TOTAL DRAINAGE/ PUMP-OUT TIME (HRS)	TOTAL DRAINAGE/ PUMP-OUT TIME (DAYS)	PUMP TIME AND VOLUME NOTES
CCP POLYJET DRAINAGE	POLYJET AT COYOTE CREEK FOR RECHARGE (EST. 12-16 CFS)	1	ISOLATION LOCK-OUT TAG-OUT	COYOTE CREEK	2,343,418	313,270	12	7.3	5,385.6	7.3	0	7.3	0.30	Drainage Time assumes 24 hr/day of actual drain time at 12 to 16 cfs.
SIMULTANEOUS DRAINAGE FROM CFI-SCC16-SCC26 DISSIPATERS	SCC26 (EST. 2 CFS) SCC16 (EST. 2 CFS) CFI (EST. 2 CFS EA.)	2		SCC26 - JONES CREEK SCC16 - MILLERS CANAL CFI - PACHECO CREEK	10,403,018	1,390,685	8	48.3	3,590.4	48.3	0	48.3	2.01	Drainage Time assumes 24 hr/day of actual drain time at 2 cfs per dissipater.
SIMULTANEOUS DRAINAGE FROM CFI-SCC16 DISSIPATERS	SCC16 (EST. 2 CFS) CFI (EST. 2 CFS EA.)	3		SCC16 - MILLERS CANAL CFI - PACHECO CREEK	4,998,918	668,260	6	30.9	2,692.8	30.9	0	30.9	1.29	Drainage Time assumes 24 hr/day of actual drain time at 2 cfs per dissipater.
ADDITIONAL DRAINAGE FROM CFI-SCC16 DISSIPATERS (IF SV2 LEAKS)	SCC16 (EST. 2 CFS) CFI (EST. 2 CFS EA.)			SCC16 - MILLERS CANAL CFI - PACHECO CREEK	1,807,637	241,646	6	11.2	2,692.8	11.2	0	11.2	0.47	Drainage Time assumes 24 hr/day of actual drain time at 2 cfs per dissipater. If SV2 leaks, metering valve at CCP should be adjusted to bring total head below 114.8 meters (376 feet) while maintaining turnout flows
SCC9 NOZZLE PUMP-OUT		MAY NOT BE NEEDED		ORTEGA CREEK	31,358	4,192	1	1.2	448.8	1.2	8	9.2	1.53	Pump-out Time assumes: - 4 hrs of equipment delivery & set-up - 6 hr/day of actual pump time at 1 cfs and - 4 hrs of equipment break-down & removal
CFI DISSIPATER PUMP-OUT		4		PACHECO CREEK	4,808,953	642,865	2	89.3	897.6	89.3	8	97.3	4.05	Pump-out Time assumes: - 4 hrs of equipment delivery & set-up - 24 hr/day of actual pump time at 2 cfs and - 4 hrs of equipment break-down & removal
SCC16 DISSIPATER PUMP-OUT		4		MILLERS CANAL	3,575,698	478,002	2	66.4	897.6	66.4	8	74.4	3.10	Pump-out Time assumes: - 4 hrs of equipment delivery & set-up - 24 hr/day of actual pump time at 2 cfs and - 4 hrs of equipment break-down & removal
CFO NOZZLE PUMP-OUT				PACHECO CREEK	28,544	3,816	1	1.1	448.8	1.1	8	9.1	1.51	Pump-out Time assumes: - 4 hrs of equipment delivery & set-up - 6 hr/day of actual pump time at 1 cfs and - 4 hrs of equipment break-down & removal
SCC16 NOZZLE PUMP-OUT				MILLERS CANAL	105,501	14,103	1	3.9	448.8	3.9	8	11.9	1.99	Pump-out Time assumes: - 4 hrs of equipment delivery & set-up - 6 hr/day of actual pump time at 1 cfs and - 4 hrs of equipment break-down & removal
SCC19 NOZZLE PUMP-OUT		5		PAJARO CREEK	928,845	124,169	1	34.5	448.8	34.5	8	42.5	7.08	Pump-out Time assumes: - 4 hrs of equipment delivery & set-up - 6 hr/day of actual pump time at 1 cfs and - 4 hrs of equipment break-down & removal
SCC23 NOZZLE PUMP-OUT				SAN YSIDRO CREEK	107,469	14,367	1	4.0	448.8	4.0	8	12.0	2.00	Pump-out Time assumes: - 4 hrs of equipment delivery & set-up - 6 hr/day of actual pump time at 1 cfs and - 4 hrs of equipment break-down & removal
SCC26 NOZZLE PUMP-OUT				JONES CREEK	319,329	42,688	1	11.9	448.8	11.9	8	19.9	3.31	Pump-out Time assumes: - 4 hrs of equipment delivery & set-up - 6 hr/day of actual pump time at 1 cfs and - 4 hrs of equipment break-down & removal
SCC29 NOZZLE PUMP-OUT				JONES CREEK	345,384	46,171	1	12.8	448.8	12.8	8	20.8	3.47	Pump-out Time assumes: - 4 hrs of equipment delivery & set-up - 6 hr/day of actual pump time at 1 cfs and - 4 hrs of equipment break-down & removal
SCC32 NOZZLE PUMP-OUT				JONES CREEK	156,994	20,987	1	5.8	448.8	5.8	8	13.8	2.30	Pump-out Time assumes: - 4 hrs of equipment delivery & set-up - 6 hr/day of actual pump time at 1 cfs and - 4 hrs of equipment break-down & removal

